A

DISSERTATION

ON THE

BATH WATERS.

BY

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BRITISH MUSEUM

TO

THE KING.

SIR,

THE Work I have the honour of your Majesty's permission to present to your notice is, an attempt to investigate from experience the Medicinal Properties of the

the Bath Waters;—a remedy confeſſedly of more general efficacy than any that can properly be called the indigenous produce of your native kingdom of Great-Britain.

That ſuch a work ſhould be in ſeveral inſtances erroneous, and probably in many more defective, is not a matter of doubt; but when I reflect that it is the reſult of the experience and attentive obſervation of twenty years, and that it is compoſed without the

ſmalleſt

ſmalleſt prejudice in favour of any particular opinion or theory, but ſolely with a view to the inveſtigation of truth, and the promoting of medical information, I do not deſpair of its finding a favourable reception from your Majeſty's candour and benevolence.

That your Majeſty's reign may be long and happy, is the wiſh of none more than of

Your faithful ſubject

and ſervant,

William Falconer.

BATH,
Jan. 1ſt, 1790.

PREFACE.

THE preſent Work is meant to be a practical Account of the Medicinal Effects of the Bath Waters, collected from the experience and obſervation of twenty years. Time has, however, by no means cleared up all the doubts which I entertained when I firſt ventured on this arduous ſubject. In ſome inſtances, indeed, the effects of the waters, and the conſequent application of them, appear to be more clearly defined; but in many others, knowledge ſeems to extend little farther than ſuch a probability as will warrant or encourage a cautious trial. Nor do they in this reſpect differ from other

powerful

powerful medicines. Reaſonable conjecture muſt be the foundation of the application of the majority of the remedies uſed in phyſick; and though, in ſome inſtances, repeated experience has enabled us to advance a ſtep farther, thoſe beſt acquainted with the ſcience, beſt know, how moderate a confidence ſuch experience as can fall to the lot of an individual ought to afford.

Thoſe who have written ſpecifick treatiſes on the virtues of particular remedies, have contributed much to miſlead the opinions of mankind concerning their efficacy. Medicinal ſubſtances ſeem to be ſelected rather as ſubjects of panegyrick, than of impartial examination. Sometimes unworthy motives, and at others the caprice of prejudice, joined with a ſanguine diſpoſition of mind, have contributed to cheriſh this empirical preſumption, and to corrupt the fountains of information

mation derived from matters of fact, nearly as much as thoſe that ſpring from the moſt fanciful theory. When we peruſe the caſes which have been the ſubjects of ſuch trials, we are apt to think the character of the favourite remedy fully eſtabliſhed, until melancholy experience replaces it in its true ſtation, by teaching us, that it is poſſible, by florid deſcription, amplification of ſucceſs, and ſuppreſſion of unfavourable events and circumſtances, to miſlead almoſt as effectually as by advancing a poſitive falſhood.

Even thoſe authors who have treated at large of the Materia Medica, and whom we could ſcarcely ſuſpect of any undue predilection for a favourite remedy, have indulged by far too laviſhly in commendation of ſome ſubſtances, to which the candid and uniform experience of practitioners does not attribute ſuch virtues. Could it be imagined that

BOERHAAVE,

BOERHAAVE, whoſe integrity was equally celebrated with his medical diſcernment, ſhould be ſo far miſled by authority, as to recommend ſuch a plant as *Rue* for its qualities *in curing epilepſies, and expelling poiſon*; and that the laſt of theſe qualities (an indication confeſſedly of the moſt indefinite nature) ſhould be in ſome meaſure aſcribed to the ſame ſubſtance, by ſuch writers as MURRAY and BERGIUS?

Amid ſuch profuſion of applauſe, Mineral Waters have not been neglected. Not thoſe only whoſe moderate encomium time and experience have, in ſome circumſtances of health, juſtified, have been

"high above deſert renown'd;"

but nearly the ſame virtues have been attributed to others on ſcarcely any better grounds than that they were unfit for uſe in diet, or other domeſtick purpoſes.

Providence

Providence has, no doubt, ſcattered remedies of this kind (as well as other bleſſings) in various places, which may in many inſtances conduce to relieve diſeaſe; but prejudice and intereſted motives have ſo diſguiſed the narratives of their efficacy, as to embarraſs to a great degree the choice of them, among thoſe whoſe profeſſion entitles them to recommend their uſe. It would be prudent, as well as conſcientious, in thoſe who write ſuch encomiums, to reflect that mineral waters, like other medicinal ſubſtances, are appropriated to certain indications only, and that the more powerfully they fulfil theſe, the greater miſchief they are capable of producing if improperly adminiſtered. The latter of theſe conſiderations is, however, ſeldom attended to. Succeſsful caſes are carefully noticed, but thoſe wherein they have been obſerved to be injurious, are generally concealed. This mode of procedure may induce more

perſons

perſons to make the trial, but muſt diminiſh the proportion of benefit received.

Mineral waters, like other medicines, are not adapted to diſorders at large, but to certain ſtages and ſituations of them; and what may be of the greateſt ſervice in one ſtage, may be utterly improper in one that is more advanced. Diſorders likewiſe are often combined, and a remedy that may ſuit the one, may be hurtful in the other. No ſatisfactory information concerning ſuch remedies can therefore be had, unleſs obſervations be with equal care collected and related, concerning the bad as well as good effects that they produce. If mineral waters are deſcribed as capable of doing good only, without the power of doing harm, we may be ſatisfied either that the account is miſrepreſented, or that their qualities are too inſignificant to merit notice.

Whether

Whether in the enſuing work I may not have committed the ſame faults I have ſo freely condemned in others, I leave to the judgment of the publick to determine. I can only alledge, that I am not conſcious of any miſrepreſentation, and have endeavoured to guard againſt it as much as poſſible. In many diſorders the number of inſtances of the ſucceſs of the waters is related, together with that of their failures, from an unqueſtionable authority, the regiſter of the General Hoſpital of this city, in which I can aſſert, from perſonal knowledge, that the utmoſt candour is employed in repreſenting the effects of theſe waters.

Such ſources of information have no doubt improved, and (if duly attended to) will unqueſtionably continue to improve our knowledge reſpecting the diſorders to which this remedy is adapted, and the proper manage-

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ment of its efficacious powers; but to what part of the impregnation, or to what combination of medicinal influence ariſing from the combined properties of the impregnating parts, ſuch wonderful effects as we ſee here every day produced are owing, knowledge has, I apprehend, ſupplied, as yet, ſubject for conjecture only.

Chemiſtry informs us, that the Bath waters contain a ſmall portion of common ſalt, a larger proportion of ſelenites, perhaps ſome unneutralized earth, a portion of fixible air, and ſome ſulphureous gas, or inflammable air, together with a ſlight chalybeate impregnation; all which ſubſtances, either combined or ſeparately taken, we have no reaſon to believe poſſeſs, in the quantity they can here be adminiſtred, medicinal powers at all adequate to the effects we ſo frequently ſee produced by the Bath waters, and are moreover contained

tained in ſeveral mineral waters of ſlight efficacy or activity in much larger quantity than in thoſe of this place.

Chemical analyſis therefore, as far as it has been hitherto proſecuted, ſeems to give us a very imperfect view of the methods by which theſe effects have been produced; and this circumſtance has induced ſeveral perſons to deny the truth of the facts altogether, or to repreſent them as highly exaggerated, and that ſuch advantages (if any) as might be in truth received, were owing to collateral circumſtances of uncertain and indeterminate efficacy, as change of air, diet, manner of life, and the like.

That the regularity of regimen uſually practiſed here, compared with that generally followed in the polite circles of London, may on many occaſions contribute to health, is

highly probable; but to attribute all the good effects we ſee produced here, to obſervances that refer in a great meaſure to the general health, I cannot but regard as a proceeding no leſs irrational than preſumptuous. Scarcely any facts in natural philoſophy are better aſcertained, than the effects of the Bath waters, in many caſes of a local and ſpecifick nature, far beyond the reach of any of the attentions above referred to; and we might on ſimilar grounds deny any of the beſt known proceſſes in nature, (vegetation for inſtance) becauſe we cannot comprehend the means and ſteps by which it is conducted.

Whether farther light may not be thrown on this ſubject by ſome of the chemical diſcoveries that are daily advancing, or whether it may remain among the ſecrets of nature, too deep for our ſucceſsful inveſtigation, I do not preſume even to offer an opinion. Many diſcoveries

diſcoveries have no doubt been made, that were beyond our expectations, and even hopes; and, perhaps, repeated diligence may diſcover ſome hidden agent in theſe wonderful compoſitions of nature, to which a large ſhare of their powers may be with more plauſibility aſcribed, than to any at preſent known. With a view to promote ſuch enquiry, I have, at the end of this Preface, ſubjoined ſome chemical experiments, in addition to thoſe I formerly publiſhed in the Eſſay on the Bath waters, together with a pretty accurate account of the ſpecifick gravity of the Bath mineral waters, compared with that of diſtilled water, and of the other waters uſed in diet in this city.

Mineral waters, however, though their value be frequently exaggerated, ſometimes have it equally unreaſonably depreciated. The good effects ariſing from their uſe re-

quire ſome time of trial, in order to manifeſt themſelves.

This is particularly the caſe with the Bath waters, and muſt be in ſome meaſure with all remedies that are employed for chronical complaints. This circumſtance, however, together with that of their ſeldom producing any immediate or viſible operation on the body, has induced many to deſpair of ſucceſs, before a ſufficient trial of their efficacy could be had; and to repreſent them as unſerviceable in diſorders wherein we know from experience they are in moſt inſtances capable of being highly beneficial. Every medical practitioner in this city will, I think, agree with me, that a very large proportion of thoſe who viſit this place on account of their health, do not ſtay a ſufficient time to reap the whole of the advantages that the remedy is capable of imparting; and many

ſcarcely

ſcarcely long enough to determine if the nature of the diſeaſe was at all ſuited to the uſe of the waters. The time of ſtay (and of courſe the ſpace of time in which a cure or conſiderable relief is expected) is generally determined previouſly to the patient's ſetting out; and this period is often ſo unalterably ſettled, that no future contingencies (extreme neceſſity only perhaps excepted) can prevail upon them to alter their plan and arrangement.

Nor is this calculation of the time of ſtay derived in general from any conſideration of the nature of the diſeaſe, or its violence or inveteracy, but much more frequently from motives of mere caprice. To many who reſort hither, the expence neceſſarily attending a long ſtay muſt be an important object of conſideration; but in my experience, I have uſually found ſuch perſons more diſpoſed to

give the waters a fair trial in point of time, than thoſe with whom ſuch expence was a matter of no moment. Nor is this difficult to be accounted for. Thoſe who poſſeſs riches and plenty are but too apt to overrate their influence, and to imagine ſuch advantages capable of commanding circumſtances over which they have no power; and of courſe to bear diſappointments worſe than thoſe whoſe inferiority in theſe reſpects leads them to make a more moderate eſtimate of the advantages attending their own ſituation.

It is commonly obſerved, that nothing contributes more than impatience to fruſtrate its own endeavours. Unreaſonable expectations are apt to lead us to contemn or forego ſuch advantages as may be really attainable by time, patience, and perſeverance. It would be conducive to the health of the body, as well as to the eaſe of the mind, if invalids (thoſe

(thoſe eſpecially who are afflicted with chronical complaints) would reflect, that every degree of amendment is worth acquiring, and that eaſe and mitigation of the moſt urgent and troubleſome ſymptoms may be valuable, when a cure is not an object of expectation, or even of reaſonable hope.

A due attention towards keeping the mind from ſinking into deſpair, and from indulging extravagant expectations, (two mental complaints, however apparently oppoſite, in reality nearly allied) would ſcarcely contribute leſs towards ſecuring the enjoyment of life than to the prolonging of its duration.

It muſt indeed be acknowledged, that ſeveral complaints for which the Bath waters are adviſed, are ſuch as in their natural conſequences affect the mind and temper very conſiderably, and tend particularly to pro-

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duce impatience and uneaſineſs. Reflection and due conſideration may, however, moderate, if not ſubdue this diſpoſition, and incline the ſick to take no ſteps that may diſappoint reaſonable expectations of benefit, although the degree of it ſhould not correſpond with their too ſanguine hopes.

The ſituation of a phyſician is in ſuch caſes particularly delicate. No man who ſets a proper value on his profeſſional, or even his moral character, will give thoſe aſſurances of ſucceſs which the vehemence of impatience, ſtimulated by *diſeaſe* and doubt, is apt to demand as a condition to even a reaſonable trial of the efficacy of the waters. The rational and moderate hopes of amendment, which alone are juſtified and dictated by prudence, reflection, and experience, appear to ſuch perſons too uncertain or too remote to compenſate the tedioufneſs of expectation,

and

and the imperfect nature of the relief they are taught to expect.

Quacks and their connections are ſeldom wanting in vigilance to ſeize the favourable opportunities which this ſtate of mind offers, and ſome officious *pretended* friend of the ſick, but *in reality* of the quack, is ever ready to intrude, and to vouch for the efficacy of ſome noſtrum in caſes *exactly* ſimilar to that of the patient, be that what it may. Thoſe who apply for ſuch aſſiſtance would do well to obſerve, that amendment and mitigation are words not found in an empyrical vocabulary. Their promiſes never fall ſhort of a complete cure, and every amendment beneath that point is deemed unworthy their regard. Experience has confirmed the lucrative policy of ſuch conduct, however unworthy it may appear, and it is now I believe univerſally practiſed.

The

The manifeſt improbability of any event's taking place, is often the cauſe why it finds credit, if ſupported with vehement aſſertion and audacious impetuoſity. The weak and timid are overborne and confounded by the violence of aſſeveration, and thoſe who pretend to think for themſelves, are often deluded by the argument (common enough indeed, but daily refuted by experience) that no man would riſque his character on ſuch bold aſſertions, unleſs they were founded in truth.

Medical obſervation indeed furniſhes inſtances ſufficient of the failure of empirical promiſes; but ſuch frauds (for they merit no better name) are ſeldom reſented with the indignation that might be expected in a matter of ſuch conſequence. The cauſe of this, I take to be, that few are willing to expoſe themſelves to the ridicule which is apt to be caſt on ſuch as are overreached by truſting

to

to ſuch aſſurances; and that the deſire to avoid ſuch a humiliating circumſtance, often prompts thoſe who make ſuch trials to magnify every amendment, however ſlight or caſual, and to conceal every failure of ſucceſs or injury that may follow the trial of the medicine.

The beſt advice that could be given reſpecting the above-mentioned articles, to thoſe who reſort to theſe waters for relief, would be, to cheriſh general hopes of amendment only, but not to indulge expectations of attaining to any ſpecifick degree of recovery. Every improvement of the health would then be acceptable, and add to the ſpirits and ſatisfaction of the patient; whereas, as matters are generally circumſtanced, ſlight amendments often give diſappointment rather than pleaſure, as being inadequate to the degree of relief expected.

Perſons

Perſons in an advanced age, and labouring under chronical diſeaſes, are apt to forget that increaſe of age, after a certain period of life, brings decay along with it, independent of poſitive malady, and that ſuch decay may not only be conſidered as a diſorder of itſelf, but as a circumſtance that muſt in every inſtance protract recovery; and particularly where the regaining of vigour and ſtrength was the point aimed at.

Another counſel equally uſeful, would, I apprehend, be, where it could be complied with in point of circumſtances, to leave the determination of the time of ſtay, as well as the management of the waters in other reſpects to the phyſician, whoſe judgment in this, has as good right to be conſulted as in any other article.

Additional

Additional EXPERIMENTS *to thoſe before made on the* BATH WATERS.

EXPERIMENT I.

Acid of Sugar.

Three grains of acid of ſugar in cryſtals, were ſeverally added to eight ounces by meaſure of the waters of the King's, Hot, and Croſs Baths, freſh from the ſpring. A white precipitation took place in each, ſeemingly compoſed of fine white parallel threads, and appeared in greateſt quantity in the Hot-Bath water, next in that of the King's, and leaſt of any in the Croſs-Bath water.

EXPERIMENT II.

Salited Terra Ponderoſa.

To eight ounces of the water of the ſeveral baths freſh from the ſpring, were added ſeverally

verally five drops of ſalited terra ponderoſa. A white cloud was immediately generated in each, which ſoon rendered the whole of the liquor milky and turbid, but I could not diſcern in which it was the moſt plentiful.

Experiment III.

Phlogiſticated Alkali.

Ten drops of a ſolution of phlogiſticated vegetable alkali were let fall ſeverally into a pint of each of the mineral waters, and afterwards a few drops of the vitriolick acid were added to each. A bluiſh green tinge was ſoon produced in each, of a light hue, and which did not affect the tranſparency of the fluid.

In the year 1784, the buildings that formed the Croſs-Bath were taken down, in order to be rebuilt. Whilſt this was going on, ſeveral

veral interſtices in the lower parts of the building, contiguous to the channel by which the water was diſcharged from the bath, but above the level of its courſe, were diſcovered, to the ſides and top of which adhered a conſiderable quantity of a cryſtallized ſubſtance moſtly in form of pyramids, compoſed of many ſtriæ or layers of different lengths, and in general of a brown colour, though ſome of the largeſt pieces were beautifully variegated with ſeveral of the priſmatick colours. It had no ſenſible ſmell. It appeared that the cavities in which this ſubſtance was found, though above the level of the water, were much expoſed to the ſteam ariſing from it, they being found full of vapour when opened.

Experiment IV.

A ſmall piece of the foregoing ſubſtance, weighing ſix grains and a half, was held in the flame of a tallow candle for four minutes

nutes, during the greateſt part of which time it emitted a ſtrong ſulphureous ſmell, and gave out a blue flame, and a great deal of ſmoak for its bulk. When the ſmoak and flame had ceaſed, and the ſubſtance was become fully red-hot, I took it from the candle, and again weighed it. It then weighed five grains, and was changed to a reddiſh ochery colour, and was very friable, but not apparently diminiſhed in bulk. I then powdered it, and applied the artificial magnet, and found the particles attracted by it, inſomuch that by repeated application of a weak magnet, I could take up the whole. During the powdering it exhaled an evident ſulphureous ſmell, though in its original form it was perfectly inodorous.

EXPERIMENT V.

A piece of the ſame ſubſtance, a few grains only in weight, was put upon a clean piece

of

of earthen ware heated red hot. It exhaled a ſulphureous ſmell, but did not change to a red colour, as in the preceding experiment.

Experiment VI.

Twelve grains of the above-mentioned ſubſtance were finely powdered, and added to twelve ounces of diſtilled water heated to about a hundred and twelve degrees, and the bottle ſhaken up. After ſtanding about half an hour, the liquor became clear, and was examined. It had an evident chalybeate taſte, and on adding to two ounces of it, four drops of tincture of galls, a purple colour was produced, nearly of the ſame tinge which is produced in ſimilar circumſtances by the King's-Bath water.

Experiment VII.

To two ounces of the ſame water I added four drops of a ſolution of phlogiſticated

alkali, and afterwards a few drops of oil of vitriol. A blue colour of a pretty deep tinge was ſoon produced.

Experiment VIII.

A piece of writing paper, rubbed with the above ſubſtance finely powdered, was ſet on fire. It burnt with a ſulphureous ſmell, and emitted ſparks reſembling thoſe obſerved in fireworks, which are produced by filings of iron.

TABLE I.*

Of the proportionable ſpecifick gravity which the Mineral Waters and the others uſed in Diet in this City bear to Diſtilled Water, expreſſed in decimal parts.

Diſtilled Water - - -	1.0000	
River Water - - -	1.0008	
Circus Reſervoir - - -	1.0008	
Claverton Reſervoir - -	1.0010	
Beechen-Cliff Reſervoir - -	1.0011	nearly
Common Pump Water - -	1.0016	
Pump in the Grove† - -	1.0009	
King's-Bath Water - -	1.0020	
Hot-Bath Water - - -	1.0020	
Croſs-Bath Water - -	1.0018	

* The experiments relating to the ſpecifick gravity of the ſeveral waters were made with a glaſs veſſel, which I procured to be blown on purpoſe, in ſhape like the bulb of a thermometer, with a foot to ſtand upon, and about eight ounces and a half contents, with a neck about four inches long, and tapering at the end, ſo that the extreme orifice was about the ſize of a large pin. By theſe means I could aſcertain to a great minuteneſs its holding the ſame quantity every time it was filled, which could not have been done had a veſſel with a wide mouth been uſed. The veſſel, when empty, weighed exactly 2886 grains troy weight, and when filled with diſtilled water, weighed 6829 grains.

Dr. LEWIS has ſaid that a pint of diſtilled water weighs 7310 grains. If then we ſay, as 7310 grains is to 128 drachms of meaſure, (the number contained in a pint) ſo is 3943 grains (the weight of the contents of the meaſure in diſtilled water) to 69.043 drachms of meaſure, which laſt ſum gives the contents, in meaſure, of the glaſs.

Again, if we ſay as 69.043 drachms of meaſure is to 3949.5 grains, (the weight of the contents of the meaſure in pump water) ſo is 128 drachms by meaſure to 7322.1 grains. A pint therefore of the common pump water is twelve grains and one tenth heavier than a like quantity of diſtilled water. The exceſs in weight of a pint of the ſeveral waters examined above the ſame quantity of diſtilled water, is expreſſed in Table II.

Table I. was formed by deducting the logarithm of 3943. from the logarithm of the number of grains in a meaſure of the other waters examined. The mineral waters were weighed after they had grown cold. The others were weighed freſh from the ſpring. I am inclined to ſuſpect ſome error in the calculations made by Dr. LEWIS of the relative weight of diſtilled water, rain water, and pump water; he eſtimates them thus.—A pint of rain water weighs 7360 grains, or 50 grains in a pint more than diſtilled water; a difference incredible, as rain water approaches, by the conſent of all writers, very nearly to diſtilled. A pint of ſpring water is accounted to weigh 7392 grains, or 82 grains in a pint heavier than diſtilled water. HALLER, indeed, mentions a water at Roſtock in Germany, that weighed 88 grains in a pint heavier than diſtilled water, but he condemns it as bad. The proportion of ſpecifick gravity in decimal parts is,——Diſtilled Water 1.0000, Rain Water 1.0068, Spring Water 1.0104.

† The water of this pump is commended by Dr. OLIVER, ſenior. See his Work on the Bath Waters, p. 139.

TABLE II.

Of the number of grains in a pint which the Mineral and other Waters of this City exceed Diſtilled Water.

River Water	five grains and a half
Circus Water	five grains and a half
City Reſervoir	ſeven grains four-tenths
Beechen-Cliff Reſervoir	eight grains three-tenths
Beacon-Hill Reſervoir	ſeven grains four-tenths
Pump Water	twelve grains one-tenth
Pump in the Grove	ſix grains and a half
King's-Bath Water	twenty-ſix grains
Hot-Bath Water	twenty-ſix grains
Croſs-Bath Water	twenty-four grains one-tenth

TABLE III.*

Of the groſs Contents of the Waters, according to the quantity left on evaporation.

	Grains.
A Pint of the Circus Water left	2.125
City Reſervoir	.8125
Beechen-Cliff	.75
Beacon-Hill	2.625
Pump Water	1.8125
King's-Bath	8.9583
Hot-Bath	9.8125
Croſs-Bath	10.729

* I have put down this Table, as being deduced from actual experiment, though no great dependance is to be laid upon it. The ſpecifick gravity of the ſeveral waters ſhew that a large proportion of the impregnating matter muſt have been diſſipated during the evaporation. Some conjecture might, perhaps, be formed concerning the proportion of ſolid contents which the ſeveral mineral waters contain reſpectively to one another, as the ſeveral experiments were made in the ſame veſſel, and of courſe were all influenced equally by the ſhape of it, which is known to have a great effect in altering the quantity of reſiduum left on evaporation. The heat likewiſe is of great conſequence, but I can by no means venture to ſay that this was regularly kept up through the proceſſes referred to.

CONTENTS.

	Page
EFFECTS of the Bath Waters internally taken	2
Bath waters ſtimulant	*ib.*
——— aſtringent	5
——— diuretick	6
——— diaphoretick	7
——— antiſpamodick	*ib.*
Effects of the external application of the Bath waters	8
Bath waters as detergents	9
Specific powers of the Bath waters	10
Stimulant effects of the Bath waters uſed externally	*ib.*
Antiſpamodick qualities of the Bath waters uſed externally	11
Bath waters externally uſed leſs diaphoretick than common water	12
Bath waters where indicated	15
——— in Chlorofis	16
Signs of the uſe of the Bath waters being likely to be ſucceſsful	19
Signs of the water diſagreeing with the nature of the diſorder	21
Means by which the waters may be rendered agreeable to the ſtomach, and ſerviceable to health	22
What purgatives are proper during the uſe of the Bath waters	24
Uſe of the warm bath in Chlorofis	26
Time proper for a trial of the Bath waters	28
Choice of the ſeveral ſprings	30
Seaſon of the year moſt proper for the uſe of the Bath waters	32
Exerciſe proper during the uſe of the Bath waters	*ib.*
Uſe of the Bath waters in viſceral obſtructions	34
Cautions reſpecting the uſe of the waters in viſceral obſtructions	37
Uſe of the waters externally in viſceral obſtructions	41
Heat of the Bath proper to be uſed	42
Cautions reſpecting the management of the waters	43
Bath waters whether likely to ſucceed in obſtructions of the viſcera, proceeding from intemperance	46
Uſe of the Bath waters in viſceral obſtructions ariſing from hot climates	48
Uſe of the Bath waters in palſy	51
——— ——— in Idiopathick palſy	52
External uſe of the Bath waters in idiopethic palſies	58
Cautions repecting the uſe of the Bath waters in palſy	63
Quantity in which the Bath waters ſhould be taken, &c.	65

Cautions reſpecting the uſe of the bath — 67
Uſe of the pump — 76
Time of uſing the baths — 72
Seaſon of the year beſt adapted to a trial of the Bath waters 73
Exerciſe of the limbs in the bath — 74
Length of time proper for the bath to be continued — *ib.*
In palſy from an evident cauſe — 78
In palſy from cold — *ib.*
In palſy from heat — 79
Palſy from external accident — 80
Diſtortion of the vertebræ from diſeaſe, ſometimes attended with palſy 82
Palſy cauſed by lightning — 86
Palſy from mineral ſubſtances, viz. lead, copper, mercury, arſenick 87—94
Palſy from fever — 95
——— rheumatiſm and lying-in — 101
Uſe of the Bath waters in gout — 109
External uſe of the Bath waters in gout — 131
Uſe of the Bath waters in rheumatiſm — 141
——— in the chronic rheumatiſm — 146
——— in hip caſes — 149
——— in white ſwellings of the knee — 154
——— in weakneſs of the organs of digeſtion 158
——— in the hyſterick colick — 161
——— in the colick of Poictiers — *ib.*
——— in jaundice from biliary calculi — 162
Antiſpaſmodick qualities of the waters — 163
Uſe of the Bath waters in hypochondriaſis — 164
——— in hyſterical complaints — 166
——— in St. Vitus' dance — 167
——— in painful menſtruation — 168
Diaphoretick qualities of the Bath waters — *ib.*
Uſe of the Bath waters in the lepra — 169
Circumſtances in which the Bath waters are contraindicated — 182

ON THE

MEDICINAL EFFECTS

OF THE

BATH WATERS.

THE Bath waters, it is well known, are both drank, and employed as baths, with a medicinal intention. I ſhall conſider their effects when uſed in each of theſe ways, as nearly together as poſſible, ſo as to be conſiſtent with the order neceſſary to be obſerved in treating ſuch a ſubject.

Effects of the Bath waters internally taken.

The Bath water, when drank freſh from the ſpring, and in the quantity of a pint (which is the uſual quantity taken in a day) in divided doſes, has in moſt perſons the effect of raiſing and rather accelerating the pulſe, increaſing the heat, and exciting the ſecretions.* Hence they may, in medical expreſſion, be juſtly accounted *ſtimulant*.

Bath waters ſtimulant.

This term is however of large extent, and in a medical view comprehends a great variety of operations differing much from one another both in *nature* and *degree*. The ſtimulating quality poſſeſſed by the Bath waters appears to be of a very diffuſible kind. Their effects are felt at the ſame time upon the nervous ſyſtem, upon that of the blood-veſſels, and upon the alimentary canal. Hence,

* The Bath waters not only promote urine and perſpiration, but are found to increaſe the ſalivary diſcharge. Hence they are found, in caſes where there is no tendency to fever, to quench thirſt better than any other fluid.

probably,

probably, their influence is exerted rather through the medium of the ſenſations, than by any immediate effects that they produce upon the moving fibres.

Perhaps this diffuſibility of ſtimulus may be in ſome meaſure owing to the form in which the medicine is exhibited. Being in a liquid ſtate, its effects are more eaſily diſperſed over the ſyſtem, than they would be were the exiſting ſubſtance in a ſtate that required to be diſſolved previous to the exertion of its powers.

For the ſame reaſon, the ſtimulant effects of the Bath waters take place very quickly after their being adminiſtred. I have found the pulſe to have been raiſed and accelerated, and a ſenſible increaſe of the heat of the body to take place, in the ſpace of a few minutes after the drinking them.

The above-mentioned effects of the Bath waters are more permanent than might be expected from their being ſo ſuddenly exerted. The heat of the body, and increaſe of pulſe, often continue much longer than we can ſuppoſe them to be excited by the actual preſence of the water in the body.

The ſtimulant qualities of the Bath waters appear to partake very much of an inflammatory tendency. A diſpoſition of the ſyſtem to fever, eſpecially if it be of the hectic kind, is generally aggravated by it, and local inflammations are increaſed.

This tendency of the waters is liable to great variation, from idioſyncraſy, or peculiarity in the habit of the perſons who uſe them. I have ſeen perſons to whoſe ſtomachs they were particularly grateful and ſtrengthening, who were debarred from their uſe even in ſmall quantities,

quantities, by their conſtantly exciting a fever after the uſe of them was commenced, although no apparent tendency to fever in the habit of the body had previouſly ſubſiſted.

This quality is thought to be poſſeſſed in a greater degree by the water of the King's and of the Hot Baths, than by that of the Croſs Bath; and this opinion appears to be founded in obſervation. Some think the King's-Bath water more heating in general than that of the Hot Bath, but I apprehend the difference is not great, elſe it would be determined with greater certainty.

Bath waters aſtringent.

Aſtringency is another quality commonly aſcribed to the Bath waters; and it muſt be owned that coſtiveneſs frequently accompanies the uſe of them. But I am rather inclined to aſcribe this effect to their heating qualities, and to their power of exciting the other ſecre-

tions, than to any poſitively aſtringent quality. In cold weather, when the perſpiratory ſecretion is checked, the Bath waters (probably by means of their bulk and weight) ſometimes prove ſlightly purgative.

The King's-Bath water is thought to poſſeſs the aſtringent quality in the greateſt, and that of the Hot-Bath in the ſmalleſt degree. But I am not certain that theſe minute diſtinctions are not rather fanciful than true. The difference is certainly very ſmall.

Bath waters diuretic.

The Bath waters likewiſe poſſeſs a *diuretic* quality. This is obſerved by moſt of thoſe who make a trial of them, and is generally eſteemed (and I believe with juſtice) the beſt method of their paſſing off, and what indicates with greateſt probability that the patient will be benefited by the uſe of them. They poſſeſs this quality without ſeeming to exert

exert any ſenſible ſtimulus on the urinary organs. It is owing, no doubt, in part to the additional quantity of a thin fluid taken in; but the waters are certainly endued with a diuretic power independent of this circumſtance, as the water ſhews but little of this effect if not drank immediately as it is drawn from the ſpring. The Croſs-Bath water is generally thought to be the moſt diuretic of any, but the difference is not great.

Bath waters diaphoretic.

The Bath waters are likewiſe *diaphoretic*. This quality, however, is not, I think, ſo evident as the laſt-mentioned, it depending more upon the regimen of life, and other circumſtances in which the waters are taken. Some effects, however, of this kind they undoubtedly poſſeſs.

Bath waters antiſpaſmodic.

The Bath waters are likewiſe endued with an *antiſpaſmodic* quality. This is manifeſted

manifeſted by their good effects in the Colica Pictonum, and thoſe convulſive retchings to vomit which often attend the gout in the ſtomach, and in many other inſtances. Whether this quality be owing to their ſtimulus, which is rather of the inflammatory kind, (which tendency ſeems in many inſtances to counteract ſpaſmodic complaints) I ſhall not determine.

Such are, as I apprehend, the primary and immediate effects of the Bath waters internally taken. Let us now take a view of the effects produced by their external application.

Effects of the external application of the Bath waters.

The Bath waters may be conſidered as warm baths from about a hundred and ſix degrees of heat, to any inferior degree of warmth that may be deſired. When regarded ſimply as warm baths, their advantages over ſuch as are artificially heated, are not inconſiderable.

The

The quantity of water yielded by the ſprings affords opportunities for the conſtruction of baths of a ſize ſufficient to admit of motion and exerciſe of the limbs in walking; and the plentiful ſtream that ſupplies the public baths, (the King's-Bath eſpecially) and yields an ample ſufficiency for filling the private baths with freſh water for each individual that uſes them, is highly flattering to delicacy.

Theſe conveniences, however, are leſs the ſubject of the preſent conſideration, than the peculiar and ſpecific qualities which theſe waters are thought to poſſeſs.

Bath waters as detergents.

The Bath waters, conſidered as *detergents*, are inferior to common water. They curdle ſoap, and are found improper for waſhing linen, and other domeſtic purpoſes for which this quality is required. Of courſe therefore, a bath of common

common water would be preferable in caſes where the cleanſing the ſkin was the ſole object. This indication, however, ſeldom occurs in medicine, and the difference in this reſpect is too ſmall to merit regard.

It appears likewiſe to relax and ſoften the cuticle leſs than a bath of ſimple water, probably on account of its metallic and ſaline ingredients. But this difference alſo is too ſmall to be of much conſequence in medicine. The rarefying effects of the Bath waters upon the animal fluids cannot, it is obvious, differ from thoſe of common water of the ſame degree of heat.

Specific powers of the Bath waters.

It appears then, that the mechanical operation of the Bath waters upon the body does not differ materially from that of common water; but when we conſider their action upon the nervous ſyſtem, the variation is more evident.

The

The Bath waters, externally uſed, are more ſtimulant than common water. I have found the pulſe and heat of the body increaſed in a ſenſibly greater degree by bathing in the Bath water, than it was by a bath of common water. Sudden ſweats and faintneſs, which often come on after uſing a bath of common water of a conſiderable degree of heat, rarely come on after the uſe of the Bath waters; but the bathers are obſerved to be in general more alert and vigorous, and to have a better appetite, on the days of bathing than in the intervals.

Stimulant effects of the Bath waters uſed externally.

The Bath guides likewiſe, many of whom remain almoſt every morning ſeveral hours immerſed nearly up to the neck in the baths, do not appear to be relaxed or weakened by ſuch a practice, but are on the contrary, in general, robuſt, vigorous, and long-lived, and moſt of them inclining to corpulency.

I am

Anti-ſpaſmodic qualities of the Bath waters uſed externally.

I am inclined to think the Bath water externally applied to be more antiſpaſmodic than common water would be if applied in a ſimilar manner. But here I would be underſtood to mean ſuch caſes only in which ſtimulant applications are proper, as its ſuperior antiſpaſmodic quality ſeems to depend in a good meaſure on the greater ſtimulating power which it poſſeſſes. A comparative proof of this quality is difficult to be deduced from experiment, ſince ſimple warm water poſſeſſes it in a conſiderable degree. But the quick and even ſudden relief of ſpaſmodic diſorders of ſuch a nature as to admit of a trial of ſtimulating remedies, and the great antiſpaſmodic powers of the Bath waters internally taken, give us the greateſt reaſon to expect that theſe powers may produce their proper and ſpecific effects, even when the remedy is externally applied; and experience ſeems to ſhew that this opinion is well founded.

I am

I am diſpoſed to believe that the Bath water is much leſs apt to produce violent perſpiration than a bath of common water, having obſerved ſeveral perſons, whoſe ſtrength was unequal to endure a large diſcharge of this kind, bear bathing in the public baths at this place without any loſs, but on the contrary, with an increaſe of ſtrength. This might be in part owing to the ſpecific qualities of the water, but I believe it was to be aſcribed principally to the diminution of the perſpiratory diſcharge.

Bath waters externally uſed leſs diaphoretic than common water.

I have before mentioned that the tendency to perſpiration in the day-time is much leſs during the day of bathing than when common water is uſed, and I likewiſe find that it promotes the diuretic evacuation conſiderably more than is done by common water; which ſeldom takes place when the diſcharge by perſpiration is increaſed at the ſame time.

It

It has been found by experience, that when the heat of a warm bath of common water exceeds 93 degrees, that the urinary diſcharge is not increaſed; but the public baths of this place (two of which conſiderably exceed this degree of heat) are found to excite very powerfully the urinary ſecretion.

Of the CIRCUMSTANCES *and* DISORDERS *in which the uſe of the* BATH WATERS *is indicated.*

HAVING thus premiſed ſomewhat of a general view of the effects of the Bath waters, I ſhall next conſider the indications which they are adapted to fulfil, with an application to particular diſorders, and ſhall ſubjoin ſome obſervations on the caſes in which they are contra-indicated, or wherein they are likely to be unſerviceable.

Bath waters where indicated.

The uſe of the Bath waters is indicated in caſes of languor ariſing from inertia, whether this be of the ſyſtem in general, or any particular part, as of the blood-veſſels, nervous ſyſtem, or of the alimentary canal.

Thus

Thus they are found uſeful in ſuch caſes of permanent languor as uſually go under the name of cachectic.

In Chlorosis. The moſt common of theſe is the *Chloroſis* incident to women; a complaint which (together with menſtrual obſtructions) is uſually attended with a weak low pulſe, diminution of bodily ſtrength, depravation of appetite and digeſtion, paleneſs of countenance and of the body in general, coldneſs of the extremities, often attended with ſwelling, and great languor of the powers of the mind as well as of thoſe of the body.

In this ſtage of the complaint the internal uſe of the Bath waters is found by experience to be (what we might rationally conclude from its primary effects that it would) of the greateſt ſervice, exciting the ſlow and languid efforts of nature, raiſing the pulſe, cheering the ſpirits, and exciting the natural ſecretions. They are, however, found moſt

ſucceſsful

ſucceſsful when tried before any conſiderable affection of the ſtomach takes place; and that organ poſſeſſes ſtrength ſufficient to retain a proper quantity of the waters, and diſperſe through the ſyſtem their effects.*

The Bath waters are likewiſe uſeful in the more advanced ſtages of this complaint, which are often attended with obſtruction of the abdominal viſcera, as of the liver, ſpleen, and meſentery. In all of theſe, if uſed before any fever or hectic diſpoſition takes place, they are often (when cautiouſly exhibited) of great ſervice, by the gentle excitement they afford to the nervous and circulatory ſyſtems, and by their ſtrengthening effects on the alimentary canal.

* HOFFMAN makes a ſimilar obſervation relative to the Carlſbad Waters:——

"Locum vero habent hæ aquæ, ſi ventriculus adhuc eſt "ſalvus, ipſarumque copiam aquarum ferre et ſubigere "poteſt."——*Hoffm. de Chloroſis indole, &c.*

The uſe, however, of the Bath waters is much ſafer in the firſt ſtage of the diſorder, than when it is ſo far advanced as to produce the ſymptoms laſt mentioned. In the former there ſeems to be no hazard incurred by any trial of them that is directed by common prudence, but in the latter much attention is neceſſary. The quantity in either caſe muſt be adjuſted to the circumſtances of the patient.

When there is no hazard of exciting fever, a pint of the waters may be taken daily, in divided doſes, by any perſon of eighteen years of age and upwards, where no particular circumſtances occur to limit the quantity. The general method of drinking them is, to take two-thirds of the above quantity before breakfaſt, and the remainder at noon.

The former quantity, however, is not drank at once, but in two draughts, with generally about half an hour's interval between

between them. The ſigns of the water being likely to prove ſucceſsful may often be perceived before any abatement of the ſymptoms immediately connected with the diſorder can take place.

Signs of the uſe of the Bath waters being likely to be ſucceſsful.

Thoſe moſt generally obſerved are, the waters imparting a pleaſing ſenſation, reſembling a glowing warmth, to the ſtomach, immediately on their being ſwallowed; their cauſing ſome degree of appetite, eſpecially for the breakfaſt; their raiſing the ſpirits; and above all, their quick excitement of the urinary ſecretion,—a circumſtance I have always noticed as the ſureſt indication of their being likely to prove ſucceſsful of any that has fallen under my obſervation.

In caſes where obſtructions of the viſcera require greater caution, the quantity of water muſt be proportionably diminiſhed, as to one half the former quantity, or even leſs; and its immediate effects more narrowly watched, particu-

larly with regard to the action of the water as a diuretic.

In promoting this effect, ſome medicinal ſubſtances, joined with the waters, are often very powerful, and of the utmoſt ſervice, when the action of the waters in this way is rather ſlow. The dulcified ſpirits of vitriol and of nitre are moſt commonly uſed for this purpoſe, and in general ſucceed very well. The latter is more uſually employed, and is thought to be moſt efficacious; though the difference between them is not great, and often varies from idioſyncraſy in different people.

From twenty drops to a tea-ſpoonful in each glaſs is the quantity commonly directed. It often happens, when this ſecretion has been once excited, that the waters themſelves are ſufficient to keep it up, in which caſe the additional ſubſtances become unneceſſary, and may be laid aſide.

I have

I have before mentioned, that the Bath waters, when taken by any perſon not labouring under any diſorder as is there ſuppoſed, are very powerful in quenching thirſt. This circumſtance affords, next to their effects on the urinary ſecretion, the beſt criterion for determining the probability of their being of ſervice of any that I know.

If the mouth feels moiſt, pleaſant, and cool, for ſome time after the taking the waters, and the tongue remains of a good colour during their uſe, we may reaſonably preſume that they agree well with the conſtitution, and are likely to benefit the health, and may be aſſured that they are at leaſt innocent.

Signs of the water diſagreeing with the nature of the diſorder.

On the contrary, when the waters internally taken produce head-ach, thirſt, and dryneſs of the tongue; when they feel heavy and burdenſome upon the ſtomach; when they pall the appetite, or cauſe nauſea and ſickneſs, and have

no effect in increaſing the urinary diſcharge, we may be aſſured that no good effects are to be expected from their uſe, unleſs theſe ſymptoms can be removed.

Means by which the waters may be rendered agreeable to the ſtomach, and ſerviceable to health.

It ſometimes happens that this may be in a good meaſure accompliſhed by a diminution of the quantity of water drank. Delicate habits will not unfrequently have a feveriſh tendency excited in them by ſuch a doſe as would be moderate, or even ſcarcely ſenſible in its effects, upon the generality of people; and in ſuch circumſtances it is always proper to try what may be done by diminiſhing the doſe, even to a very ſmall quantity, as a quarter of a pint taken in the morning or at noon daily. Some abatement of the ſtimulus of the waters may be produced, by ſuffering the glaſs to ſtand a few ſeconds or a minute between the time of its being filled and its being drank; but I rather prefer for this purpoſe a diminution of the quantity, in caſes where we employ the waters with

with expectation of benefit from their cordial and ſtimulating qualities. By ſuffering the water to ſtand, we indeed abate the ſtimulus, but at the ſame time increaſe the bulk of the doſe beyond what is neceſſary, and render it leſs agreeable; two circumſtances eſpecially to be conſidered in delicate conſtitutions.

I have juſt before mentioned the diuretic ſecretion as the moſt favourable means of the waters paſſing off. When this can be effected by artificial means, as by any additional ſubſtances ſuch as are above mentioned, the troubleſome ſymptoms moſtly ſubſide, and the beſt hopes of relief may be entertained. An attention to the ſtate of the bowels is always proper during the uſe of the Bath waters, but eſpecially neceſſary in delicate habits, and particularly where it would be dangerous to excite any tendency to fever or inflammation.

What purgatives are proper during the uſe of the Bath waters.

It is very common for the Bath waters to produce a rather coſtive habit of body, which ſometimes takes place in caſes wherein the waters agree very well with the general health, and are even of ſervice reſpecting the particular complaint. This effect, however, it may be neceſſary to moderate, which may be moſt properly done in young perſons by ſuch purgatives as are mild in their operation, excite the urinary diſcharge, and do not weaken the ſtomach or pall the appetite.

It is indeed ſcarcely poſſible to find any medicines of this kind that poſſeſs altogether the above requiſites; but the mild neutral ſalts combined with ſome aromatic ſubſtance, as the leſſer cardamom, in an infuſion of which they may be conveniently diſſolved, anſwer very well. Soluble Tartar, or the Salt of Rochelle, are more agreeable to the taſte and more mild in their operation than the bitter purging Salt, or the true Glauber's Salt; and I think a ſaline purgative

purgative lately brought into uſe under the name of Sal Catharticus Phoſphoratus, or Soda Phoſphorata, promiſes to excel for ſuch purpoſe all the purgative ſalts now in uſe, it being mild yet ſufficiently active in its operation, poſſeſſing very little taſte, and that not very unpleaſant, and ſufficiently ſoluble in ſimple water or in any watery infuſion, not to increaſe the bulk of the doſe to any inconvenient or diſagreeable ſize. As the combination of ſtomachic bitters with purgative ſubſtances is thought, and probably with reaſon, to make the latter leſs palling to the ſtomach and appetite, it may be proper ſometimes to diſſolve the purgative ſubſtances above recommended in an infuſion of ſome tolerably pleaſant bitter ſubſtance, as of gentian root, or of chamomile flowers, or (perhaps what might anſwer better) of the quaſſia amara, which I have found by repeated experience to be the moſt pleaſant, and, as I think, the moſt efficacious bitter of any in medicinal uſe; and

to

to be the moſt improved in taſte, by being combined with aromatic ſubſtances, any of which that may be moſt agreeable in flavour, may be joined with it on this occaſion.

The bitter purging infuſion, if more agreeable, may be uſed for the ſame purpoſe. The diuretic quality which bitters in general poſſeſs, is no ſmall recommendation of their uſe in obſtructions of the viſcera.

Uſe of the warm bath in chloroſis.

The warm bath is, however, found by experience to be the moſt effectual remedy. This has been recommended in various forms, by ſeveral of the moſt approved writers both ancient and modern: Hippocrates adviſes the frequent uſe of the warm bath,* and of an aromatic fumigation at the ſame time, in a caſe of this kind; and Hoffman recommends a warm bath of aromatic ingre-

* Hippocratis de Superfætatione. § 24.

dients

dients infuſed in the water,† in which he directs the patient to make a long ſtay, as for the ſpace of an hour; and Van Swieten preſcribes a form for the ſame remedy nearly reſembling that mentioned by Hoffman, and expreſſly with an intention that the virtues of the ingredients might be abſorbed into the courſe of circulation. Modern practice, however, I believe, ſcarcely authoriſes on ſuch occaſions ſo long a ſtay in a warm bath as is above adviſed; and the Bath waters are found to produce all the good effects of which we have reaſon to believe them capable, in much leſs time. In general, I believe, from ten to twenty minutes is the uſual ſpace allotted for remaining in the bath.

As the bath is here uſed on account of its ſtrengthening properties, I think the morning the beſt time, as when uſed then, it will be leſs likely to excite per-

† Hoffman de Chloroſis Indole. § 24.

ſpiration

ſpiration than when tried in the evening; perhaps, however, in cold weather it may be ſafer to bathe in the evening, as it will not interfere with the uſe of exerciſe during the day.

Time proper for a trial of the Bath waters.

The time of trial of the Bath waters muſt be determined by their effects principally, and in ſome meaſure by the frequency of their uſe. From one to two months is generally ſufficient, but ſometimes a longer ſtay may be neceſſary. Sydenham ſpecifies the latter of the above-mentioned periods, and adviſes the bath to be uſed every other day; and on the days whereon the patient does not bathe he recommends the waters to be drank. I never knew them adviſed to be tried in this manner, as it is not, I believe, at preſent thought that the uſe of the bath precludes the drinking of the waters upon that day on which the patient bathes, but rather that it furthers the good effects of the bath. The bath may be repeated twice or thrice a week,

week, as the ſtrength and ſpirits ſeem to improve under it, and may be continued as long as any progreſs in amendment appears to be made.

This, however, is not the caſe with the internal uſe of the waters, which ſhould by no means be continued for ſo long a time. About three weeks or a month in delicate habits is ſufficient to perſiſt in a courſe of drinking the waters, which ſhould then be omitted for a week or ten days, and after that recommenced. It is found by experience that the Bath waters (if long continued) become, from being at firſt highly grateful, at length palling to the taſte and ſtomach; and when this takes place, much of the advantage before gained, as to what reſpects the appetite and digeſtion, is uſually loſt. It is therefore found adviſeable to prevent this effect, by interrupting the courſe of drinking the waters before any ſenſations of diſguſt (or even of indifference) to their taſte are felt. I have never ſeen the

the Bath waters uſed to ſo great advantage as in caſes where the patients (at the time they were adviſed to forbear) were deſirous to increaſe the quantity taken, and to continue the drinking of them for a longer time.

Choice of the ſeveral ſprings.

The choice of the ſprings is a matter of ſome conſequence. The water of the Croſs-Bath, as appears from all experiments, is ſeveral degrees cooler in its temperature than either of the other ſprings; and experience has ſhewn, that it is leſs ſtimulant and inflammatory, when internally taken. It has, on that account, been generally adviſed to be drank at the beginning of a courſe of the waters, in order to habituate the conſtitution gradually to their effects, and prepare it for a trial of thoſe that have been eſteemed the more powerful. The ſame reaſon prevails for uſing this ſpring only, in delicate habits, with which it is often found to agree better than either of the others.

The

The moderate temperature of the Croſs-Bath renders it more proper to be firſt uſed externally, as well as drank; but the private baths that have been of late years conſtructed here, have in a good meaſure ſuperſeded the public baths, with thoſe to whom the difference of expence (which is not great) is no object of concern. The private baths may be had from 100 degrees of heat, and upwards, to any inferior degree of warmth that may be deſired; and may be prepared at any hour, and are compoſed entirely of the Bath water, which is received for that purpoſe from the ſpring into cloſe reſervoirs, and ſuffered to cool there, without any loſs from acceſs of air, which might diſſipate its volatile parts. When thus cooled, it is let into the private baths, and brought to the temperature wiſhed for, by letting in a quantity of water immediately from the ſpring, whoſe heat being very conſiderable, furniſhes an eaſy and quick method of adjuſting the bath to the

degree

degree of warmth that may be deſired. I have, I think, generally found that the degree which is moſt univerſally agreeable is, as near as I can judge, to 92 degrees upon Farenheit's ſcale, and this is about two degrees lower than the Croſs-Bath* generally is.

Seaſon of the year moſt proper for the uſe of the Bath waters.

The more temperate ſeaſons of the year are at preſent generally adviſed for the uſe of the Bath waters, and in ſuch complaints they are particularly proper; very hot weather being likely, when ſuperadded to the ſtimulating qualities of the waters; to excite fever, and a cold ſeaſon is apt to counteract their effects, and to expoſe the patient to hazard of getting cold, if the water be uſed externally.

Exerciſe proper during

Moderate and regular exerciſe bears a peculiar reference to the uſe of the Bath

* The ſpring that ſupplies the Croſs-Bath is invariably, as we have every reaſon to believe, of the ſame degree of heat; but the bath varies a little, as they ſuffer it to fill faſter or ſlower.

waters

waters internally taken. Unleſs the powers of digeſtion and aſſimilation can be rendered ſuperior to the ſtimulus of the waters, they ſeldom are of any material ſervice; and this can be effected by no means ſo well as by ſuch exerciſe as does not fatigue, and exhauſt the ſtrength. We muſt indeed accommodate the quantity of the water to the ſcale before-mentioned; but the uſe of exerciſe enables us to give with advantage a larger proportion, and of courſe to accelerate relief. the uſe of the Bath waters.

As to the other branches of regimen, they muſt of courſe be ſuited to the nature and circumſtances of the diſorder, but bear no particular reference that I know of to the Bath waters, ſave that a proper attention ſhould be paid in the regulation of it to the ſtimulating effects of the waters, and that quality of them, of their being apt to aggravate complaints of an inflammatory nature.

In viſceral obſtructions.

But the uſe of the Bath waters is not confined to ſuch obſtructions of the viſcera as occur in the female ſex. They are equally ſerviceable in ſuch as take place among men, provided a trial be made of them in an early ſtage of the complaint. One of the moſt common of theſe is, that hardneſs about the region of the liver, and ſometimes of the ſpleen, which often ſucceeds intermittent fevers, and was formerly attributed to the too early adminiſtration of the Peruvian bark, but is now proved to be the conſequence of the diſorder, not of the medicine,* and frequently owing to the neglect of giving that remedy† at the beginning of the complaint. Theſe indurations, however, though threatening

* See Cleghorn on the Diſeaſes of Minorca, paſſim; and Lind on the Diſeaſes of Hot Climates, Appendix.

† Obſtinata iſtarum febrium prolixitas nos, ut ſubitam manum adhibeamus medicam admonet, ne malum interim augeatur, et inſanabiles morbi, ut obſtructiones, ſchirrhi, cachexiæ et hydropes, viſcera corripiant.

Muſitan, de Febribus, cap. 3.

in

in their appearance, are in general leſs dangerous‡ than thoſe which are the conſequence of irregularity in diet. They are for the moſt part ſuddenly produced, and are often diſſolved in a ſhort time; and experience has proved that the Bath waters are of great ſervice in promoting the reſolution of them.

If this remedy be tried ſoon after the diſorder is perceived, and before any fever, or pain of the part takes place, it may be uſed at leaſt with ſafety, and in general with much advantage. I am decidedly of opinion, from experience, that the giving repeated doſes of purging medicines, and eſpecially mercurials, in ſuch diſorders, is almoſt always prejudicial, and tends to ſtimulate and irritate the parts which we would moſt deſire to keep eaſy and free from inflammation.

Tonic remedies, cautiouſly given, ſeem to promiſe better ſucceſs in moſt affec-

‡ Van Swieten, Comm. §. 753. Sydenham, §. i. c. 5.

tions of the glands, which we have the greateſt reaſon to think to be the ſeat of the diſorder in the preſent inſtance. Analogy ſeems to confirm this opinion. The Peruvian bark is now, contrary to former ideas concerning its nature and effects, found to be of ſervice in ſchrophulous diſorders; and the chalybeate mineral waters, thoſe of Pyrmont* in particular, are employed with much advantage.

With this intention the Bath waters are recommended; and if applied to early in the diſeaſe, ſeldom fail of giving relief. At the beginning of this complaint the pulſe is ſlow, the countenance pale, the ſpirits low, and a conſiderable degree of inertia is preſent; which laſt, indeed, ſeems to have laid the foundation of the glandular obſtruction. At that period, tonic remedies, (and the Bath waters perhaps above all others) by adding

* Marcard Deſcr. de Pyrmont, vol. II. p. 47. ii.

force

force to the circulation, and generally exciting the powers of life, contribute to diſſolve or remove the obſtructing matter, and to relieve all the ſymptoms. But if their uſe be neglected at this period, and the obſtructed part becomes painful, the countenance fluſhed, and the pulſe quick, the ſeaſon for a trial of the Bath waters is elapſed, and their uſe will, as Dr. Heberden very truly obſerves,* no otherwiſe contribute to end the diſeaſe, than by haſtening the patient's death.

Cautions reſpecting the uſe of the waters in viſceral obſtructions.

But the uſe of the Bath waters, though frequently beneficial when timely uſed, requires ſome attention. Though I am perſuaded that a courſe of purging medicines, by weakening the body and ſyſtem in general, contribute to fix the obſtruction, and moreover tend to haſten the inflammatory ſtage; yet as the body is often coſtive at the beginning of the diſeaſe, it is neceſſary to obviate this

* Medical Tranſactions, vol. ii. p. 153.

circum-

circumſtance, and for this purpoſe it is proper to employ the milder remedies. A ſolution of ſome of the neutral ſalts, as above directed, which may promote the urinary diſcharge, as well as gently open the body, is very proper. The oil of the ricinus communis, or caſtor nut, is with ſome people remarkably mild and eaſy in its operation, and with ſuch it may be an uſeful purgative on ſuch occaſions. Others, however, find it rough and ſtimulating,* and ſuch perſons ſhould avoid it. For the purpoſe of exciting the urinary ſecretion, the dulcified ſpirits of nitre and of vitriol,

* I was for ſome time of opinion, that this difference of operation in caſtor oil might be owing to ſome difference in the quality of different bottles of it. It is well known that it is often extracted from the nut by the aſſiſtance of heat or of great preſſure, and that by either of theſe, ſome of the eſſential oil which is lodged in the capſule, which is found to be very acrid and violent in its effects, might be mixed with it. This may, perhaps, ſometimes happen; but I have ſeen different portions of the ſame bottle act with the greateſt mildneſs in ſome inſtances, and very roughly in others.

which

which I have before recommended, are very proper in the complaint of which I am now ſpeaking, provided the Bath waters ſhould not manifeſt a tendency to go off in that way.

I have before pointed out the neceſſity of attending to this circumſtance, as an index of the effects of the waters in a complaint of this nature, though ariſing from a different cauſe; and the ſame attention is equally neceſſary in all caſes of glandular obſtruction, in which the Bath waters (or, I believe, any other remedies) are tried. I have obſerved many caſes of this kind, but never found any benefit received, unleſs this evacuation were ſenſibly increaſed; and when that took place, the uſe of the waters was univerſally ſafe, and nearly as conſtantly beneficial.

As to the choice of the waters, the quantity in which they ſhould be taken, and the time they ſhould be continued

to

to be drank, the rules before given may be eaſily applied to reſolve this queſtion. A ſomewhat freer uſe of the waters may be allowed to men than to women, but the nature and ſtate of the diſeaſe will more properly ſuggeſt preciſe regulations of this kind than any previous direction. General rules are of ſervice, as they may be preſumed to be the reſult of general experience, but muſt be always underſtood as ſubject to be adjuſted to the particular cirumſtances of every caſe.*

The

* A German practitioner of eminence, of the name of Kampff, has ſuggeſted a remedy for internal obſtructions, which is exhibited under the form of what he called *Viſceral Clyſters*. Theſe are recommended by Dr. Marcard, his Majeſty's Phyſician to the houſhold at Hanover, as an auxiliary to the effects of the Pyrmont waters. They are ſaid to conſiſt of "a ſtrong infuſion of diſſolving (as they are called) and ſomewhat bitter ingredients, moſtly herbs, and ſome bran. They are adminiſtred twice a day, and kept in the inteſtines as long as poſſible; which, after ſome uſe, is very eaſily done, when care is taken that the rectum be previouſly emptied by a ſtool. This clyſter is entirely abſorbed by the capillary veſſels of the inteſtines, and experience has proved it to be more powerful in diſſolving obſtructions

The external uſe of the Bath waters is, for obvious reaſons reſpecting one of the circumſtances, not ſo directly indicated in obſtructions of the viſcera, owing to this cauſe, as in thoſe that occur in the circumſtances firſt mentioned; as coinciding, however, with the general intentions of cure, they are undoubtedly proper to be tried. Great caution is however neceſſary in their uſe; a moderately warm bath, not exceeding 92

Uſe of the waters externally in viſceral obſtructions.

ſtructions than any other means whatſoever. The following is one of the formulæ, which may be altered according to circumſtances:

℞. Radic. Taraxaci
Herb. Fumariæ
—— Saponariæ
Card. Benedict.
Florum Verbaſci
—— Chamœmel
Furfuris Tritic. paululum uſtulati ana ℥i.
Conſcinde ſimul et infunde manipulos duos cum aq. bull. ℥viii. Stent in vaſe clauſo in loco calido per horas ſex et cola. F. enema appl. bis quotidie."

I never ſaw any trial made of this remedy, but think it might merit one, and be an uſeful aſſiſtant perhaps to the waters of Bath, as well as to thoſe of Pyrmont.

degrees,

degrees, ſhould be choſen, and the ſtay in it ſhould not, at firſt, exceed from five to ten minutes. The effect it produces ſhould alſo be carefully obſerved. If the patient feels eaſy and compoſed whilſt in the water; if the ſleep the ſucceeding night be calm and quiet; if the ſkin remain ſoft and cool, the appetite tolerable, the faculty of taſting perfect, the tongue moiſt and clean; and to theſe be added an increaſe of the urinary ſecretion, which often takes place when a bath rather cooler than the natural heat of the body is uſed; we may, under ſuch favourable auſpices, prognoſticate, that the remedy is at leaſt ſafe, and likely to prove ſucceſsful.

Heat of the bath proper to be uſed.

The directions above given concerning the regulation of the heat of the bath, require in the preſent, and indeed in all delicate caſes, to be ſtrictly attended to, and poſitively inſiſted upon. A bath not exceeding 90 or even 92 degrees of heat, will often feel to perſons accuſtomed to warm

warm and close rooms, and much confinement within doors, somewhat cooler than is perfectly agreeable; and it is a frequent practice to insist upon the bath being heated, whilst they are in it, to a greater degree, and prepared warmer for the future. But I have almost always found that such alteration has been ultimately for the worse. However it might flatter the sensations for the present moment, it has often produced a hot and restless night, disturbed sleep, thirst, a white tongue, either a dry skin or profuse sweats, and a diminution rather than an increase of the urinary secretion, which, besides being small in quantity, was generally high-coloured and turbid.

Cautions respecting the management of the waters.

It is not only necessary on all such occasions to regulate the warmth of the water in which the patient bathes, but to be careful that the dressing-rooms be not from too officious care over-heated, and the air of them fouled by keeping them closed several hours perhaps before the arrival of the patient.

It is difficult indeed to overcome the ſcruples of cautious timidity on ſuch ſubjects, or to convince thoſe who have the care of valetudinarians, that freſh and pure air is more conducive to health than ſuch as is contaminated with the effluvia of burning fuel, candles, and the breath of the attendants, confined in a ſmall hot and cloſe room. Reaſonable care is no doubt neceſſary, that the room ſhould be moderately warm, and that no ſtream of air ſhould be admitted to blow upon a perſon juſt come out of a warm bath; but no extraordinary degree of heat is neceſſary, and ſuch would even be injurious.

The ſame cautions ſhould be attended to by the patient on his return home, after the uſe of the bath. The chamber he ſits in ſhould not be heated to a greater degree than uſual, nor ſhould any ſupernumerary clothing be kept on after he is got home. No heating or ſtimulant liquor ſhould be drank, under the

the notion of encouraging perſpiration, or preventing his taking cold; nor ſhould he go to bed before the uſual hour, or have the bed-chamber heated beyond what he is accuſtomed to, or have any additional bed-clothes. The intention with which the bath is adviſed is, to invigorate and aſſiſt the powers of life and to ſoothe the feelings, not to encourage a weakening evacuation.

Without theſe precautions we cannot form any juſt eſtimate of the efficacy of the remedy. Every practitioner at this place has, I doubt not, ſeen bad effects aſcribed to the uſe of the warm bath, which were in reality owing to the miſtaken regimen with which it was accompanied.

Bath Waters whether likely to ſucceed in obſtructi-

The uſe of the Bath waters in ſuch obſtructions of the viſcera as are often the conſequences of intemperance, particularly in ſpirituous liquors, is more ambiguous. It is indeed probable, that they

ons of the viſcera, proceeding from intemperance.

they may be highly ſerviceable in theſe, when beginning to be formed, which we may reaſonably ſuppoſe to be the caſe when the patients *begin* to loſe the complexion of health, and change to a dull leaden hue; when the appetite fails, and the body becomes coſtive, the extremities cold, and the mind and diſpoſition torpid and inert. In ſuch circumſtances, of which I ſhall ſpeak more hereafter, the Bath waters are often very ſerviceable, provdied the habit which gave riſe to the diſeaſe can be totally laid aſide. But if the diſorder has advanced farther, and the patient has, joined to a pale leaden complexion, and total loſs of appetite, a foul or white tongue, tranſient fluſhings of heat preceded by ſhivering, a pain in the region of the liver either dull or acute, which pain is aggravated by taking food; if the belly be hard and enlarged, and if any induration of the viſcera be ſenſible to the touch, or any increaſe of pain be felt on ſlight preſſure, and if any oedematous ſwellings of the extremities

extremities come on; in ſuch circumſtances the uſe of the Bath waters is not only unavailing to any good purpoſe, but generally tends not only to haſten diſſolution, but to make the ſhort interval of life much more painful and diſtreſſing, than it probably would have been had a mild regimen and a milk diet been ſubſtituted in their place.

Uſe of the Bath waters in viſceral obſtructions ariſing from hot climates

Bath waters are ſaid to be of ſervice in ſuch obſtructions of the viſcera as are frequently found among thoſe that have paſſed much of their time in hot climates, particularly among thoſe who are not natives of ſuch countries. Several cauſes are aſſigned for the prevalence of ſuch diſorders in ſuch ſituations, all of which, I doubt not, may contribute thereto;* ſuch as, the increaſe of the biliary ſecretion, which is well known to be the conſequence of great external heat long continued, and probably ſome alte-

* Cleghorn's Introduction to his Obſervations on the Epidemic Diſeaſes of Minorca.

ration

ration in its quality from the ſame cauſe; next, the frequency of intermittents, and thoſe generally of a violent kind, which are in a good meaſure endemic in many hot climates, and are well known even in this country (where they appear under a much milder form) to produce ſuch complaints; next, the intemperate uſe of ſpirituous liquors,* which the natives of a colder climate are apt to mix in too large proportion with the water they drink, partly from former habit, and partly from want of conſidering that in hot climates a larger quantity of fluid is neceſſary to be taken, and that of courſe a greater dilution of the ſpirit is neceſſary.

The want of good water in many hot climates is another cauſe of theſe diſorders. The effects of impure water in producing diſeaſes of the belly and ſpleen

* Cleghorn on the Diſeaſes of Minorca, Introd. p. 69. *Bontii de Medicinâ Indorum*, p. 71, cap. 7.

are

are mentioned by Hippocrates* and Aretæus,† and confirmed by later authorities.‖ I have ſeen this complaint in ſome perſons who had lived in South-Carolina, where it is very common, and thought with reaſon, to be at leaſt aggravated by the bad quality of the water uſed in diet.

I have remarked, that viſceral obſtructions, which take their riſe in warm climates, are more commonly attended with a jaundiced colour of the ſkin, than ſuch as take their riſe in our own country. Whether Bath waters might be ſerviceable, if tried very early in the diſeaſe, I cannot determine; but thoſe caſes in which I have had an opportunity of obſerving their effects, were too far advan-

* Ει μεντοι ποταμοι μεν μη ειησαν, τα δε υδατα χρηναια τε και ϛασιμα πινοιεν και εοδωδεα, αναϱκη τα τοιαυτα της ϛαϱϱος ατηϱα ειναι και σπληνος.

De Aere, Aquis & Locis, §. lv.

† Υδατα πλατεα, αλμυϱα, βϱομωδεα.

Aret. de Splenis Affect.

‖ Cleghorn ut ſupra.

ced for any benefit to be expected. Such diſorders, in hot climates, partake much more of an acute nature than with us, and often come to a criſis by ſuppuration, which may ſometimes be diſcharged by an opening externally. The ſame remedies alſo that are ſucceſsful with them, are found to fail among us. Mercury, copiouſly rubbed upon the pained part in form of an ointment, or taken largely internally, is an approved remedy in liver complaints in thoſe countries, but among us, that remedy, in the inſtances in which I have ſeen it tried, (and I have ſeen ſeveral) appeared to aggravate all the bad ſymptoms, and manifeſtly to haſten death.

In liver complaints that have proceeded no farther than a ſimple obſtruction of the biliary ducts, whether contracted in hot climates or at home, the Bath waters are likely to be of ſervice; but, I apprehend, moſt of thoſe that are produced in hot climates, are of a more complicated nature,

and too deeply rooted to be ſafely treated by any medicines that excite the circulation. This, however, is conjecture only, and ſhould not abſolutely determine againſt a cautious trial of their effects, provided that no internal hardneſs be ſenſible to the touch, and fixed inward pain, ſoreneſs, or tendency to fever, be not among the ſymptoms.

As the Bath waters are found to be of ſervice in exciting the motion of the veſſels when languid, they are likewiſe efficacious in caſes of inertia of the nervous ſyſtem.

Uſe of the Bath waters in palſy.

Paralytic diſorders are obviouſly of this nature, and in theſe the Bath waters have been found of the greateſt ſervice; and, if judiciouſly managed, may be exhibited ſafely in moſt kinds of this complaint. It is not neceſſary in this place to enter upon a deſcription of this diſeaſe; ſome circumſtances and ſymptoms belonging to it, however, which may be neceſſary

to explain the indications of cure, I ſhall mention.

Palſies may be divided into ſuch as ariſe without any evident or probable cauſe to which they may be immediately aſcribed, and into thoſe wherein the cauſe that produces them is evident or highly probable.

This diſtinction is of great conſequence, as theſe diſorders, however they may agree in generic marks, are extremely different in many reſpects, and require a different method of treatment.

Idiopathic palſy.

Idiopathic palſies are ſometimes, but not always, preceded by apoplexy, or ſome ſymptoms of the apoplectic kind, as vertigo, fainting, impaired viſion, hearing, or ſome other failure in the exerciſe of the ſenſible faculties. Theſe happen frequently to people ſomewhat paſt the meridian of life, of a corpulent habit, ſhort neck, and ruddy complexion, who have

rather indulged their appetite;* and particularly to thoſe who, having before uſed much exerciſe, are not careful to retrench in their diet after they have forborn to uſe exerciſe any longer, eſpecially if the tranſition from an active to an indolent life has been ſudden. Caſes of this kind are generally denominated the ſanguineous apoplexy, and, as it ſeems, with reaſon; ſince a redundance of blood, either general, or accumulated in ſome particular part, as the head, appears to be evidently a concomitant circumſtance, and probably the immediate cauſe of the diſorder.

Palſies thus circumſtanced are ſeldom if ever brought to this place, or at leaſt to a trial of the waters, before large previous evacuations, particularly by bleeding, have been uſed, and the patient put upon a ſpare (or at leaſt very moderate)

* Εξεις, οι παχεες κατα φυσιν, υγιεοι, αργοι, ζωωδεες.
Aretæi, lib. 1. *cap.* 7, *de caus. & ſign. diut. morbor.*

diet.

diet. With theſe precautions, however, and when all ſigns of fulneſs, both in the ſyſtem of blood-veſſels, and in the general habit, have ſubſided, the internal uſe of the Bath waters has been found of the greateſt ſervice.

Some phyſicians of eminence have been of opinion, that apoplexies and palſies frequently proceeded immediately from ſome diſorder of the ſtomach. Thus much is certain, that the head and ſtomach are cloſely connected, and are liable mutually to affect one another, as we ſee by daily experience. It is far from unuſual for perſons affected with palſy to have the appetite very good, as it is called, (that is, not eaſily ſatisfied) and ſometimes it is ſaid to be increaſed to a great degree. In the inſtances, however, which I have had an opportunity of examining, I have not found that the deſire of taking food was in reality much increaſed, but that it ſeemed rather to be owing to the ſtomach having loſt its inſtinctive faculty of

of adjuſting the proportion of the food taken in, to that of the nutrition required, and to the powers of aſſimilation in the ſyſtem.* Perſons thus affected, may be properly ſaid to have a depraved, tho' frequently a great appetite. They perſevere, often without much diſcrimination of the quality of the food, to load the ſtomach, for want of that ſenſation of fulneſs or ſatiety that renders any farther accumulation of food diſguſting.

One circumſtance, indeed, ſeems to contradict this opinion; which is, that ſuch perſons will often (though not always) digeſt ſuch enormous quantity of victuals without any apparent trouble or inconvenience, and ſometimes with even leſs flatulence and uneaſineſs, than took place at ſuch times before the paralytic attack. But we ſhould obſerve, that the ſenſibility of the ſtomach is often increa-

* Idiots and inſane perſons are often ſubject to ſimilar irregularities of appetite with thoſe here deſcribed.

ſed

ſed to a morbid degree, and that ſuch increaſe is the ſource of many of what are called ſtomach complaints. If this can be removed, even though the tendency ſhould be towards the other extreme, it is likely a mitigation of the uneaſy ſymptoms may take place, and the buſineſs of digeſtion, perhaps, from the organs being habituated to the performance of their reſpective functions, be conducted with leſs diſturbance and irregularity than before.

However true or falſe theſe opinions (which I offer only as matters of conjecture) may be, it is at leaſt true that the indefinite appetite, as it may be termed, which ſometimes attends paralytic diſorders, is often capable of being regulated and reduced within proper bounds by the internal uſe of the Bath waters, which ſeem to reſtore the diſtinguiſhing faculty of the ſtomach, with regard to the quantity it ought to admit.

Sometimes,

Sometimes, though I believe leſs frequently, an oppoſite diſpoſition of the ſtomach takes place in paralytic caſes, and that organ becomes inſenſible to the cravings of appetite, and the perſon is totally indifferent as to ſupport, and would to appearance periſh for want of food, were not the neceſſity of it ſuggeſted rather by conſiderations drawn from reaſon than from the natural feelings. This ſymptom, however, as well as the former, I have ſeen removed by drinking the Bath water, which has reſtored the natural deſire for food, and the proper and diſtinguiſhing taſte for the different ſorts of victuals, which is often much impaired, as well as the appetite.

The bowels, as well as the ſtomach, are frequently, though not conſtantly, affected with coſtiveneſs, which is ſometimes very obſtinate and troubleſome. The drinking Bath waters is often effectual to the relief of this ſymptom.

Depreſſion

Depreſſion of ſpirits, attended with frequent ſighs, and ſometimes involuntary fits of weeping, often accompany paralytic diſorders; and, I think, affect moſt ſtrongly ſuch perſons whoſe ſpirits and cheerfulneſs of mind were before the attack the moſt remarkable. This melancholy tranſition, which is often one of the moſt affecting circumſtances belonging to the diſorder, I think I have obſerved to be *particularly* relieved by the uſe of the waters; and generally ſuch amendment is the firſt ſtep towards a general recovery.

External uſe of the Bath waters in idiopathic palſies.

But the principal benefit in ſuch diſorders is derived from the external application of the Bath waters. In this place I ſhall beg leave to ſpeak a little on the nature of idiopathic palſies. We often read in books, of palſies affecting limbs in various ways; as half the body in a longitudinal direction, the ſame in a tranſverſe direction, and again in an oblique direction, as when the right arm

and

and left leg are affected, and *vice verſa*. Beſides theſe, we hear of particular limbs only being affected, while the remainder of the body is left untouched. But every idiopathic palſy I ever examined, and I have examined above an hundred, was an affection of half of the whole body in a longitudinal direction, or what is generally called a hemiplegia. It does not, however, follow, that in every hemiplegia the affected ſide ſhould be equally weakened in every part of it. It often happens that ſome parts recover in a few days nearly to the ſame ſtate as before the attack, and ſome ſingle limb, the hand and arm generally, remains as at the firſt ſeizure. This circumſtance induces many to ſpeak of palſies of particular limbs, whereas had an accurate enquiry been made of the ſtate the patient was in as ſoon as it could be learned after the firſt attack, I believe it would be found that ſufficient marks of hemiplegia would have been diſcovered to identify the diſorder. The uſe of the

Bath

Bath water has been found of great ſervice to perſons in this ſtate. Out of 730 patients admitted into the Bath Hoſpital for ſuch diſorders in the courſe of ten years, 497 were benefited, and only 31 died;—a proportion ſurely ſufficient to prove that the Bath waters have been charged without cauſe by Dr. Mead with producing apoplexy and ſudden death in ſuch perſons.*

* Dr. Mead ſays, "he has known *ſome* perſons afflicted with palſy, who, induced by the vain expectations of their phyſicians, ventured to come to this place, and to uſe the warm bath, and were immediately on their coming out of the hot water again ſeized with apoplexy, and died."

Monita & Præcept. Medica.

It cannot be denied that ſuch an inſtance, or perhaps more of this kind, may have occurred, though I never heard of any being ſpecified: but that ſuch accident was not imputable to the Bath waters, is proved not only by the account to which this note refers, but alſo by ſuch accident never having been *once* obſerved to happen among the patients of the Bath Hoſpital, notwithſtanding the ſame has been inſtituted 48 years, and in that time between four and five thouſand paralytic patients belonging to that inſtitution muſt have uſed the warm baths at this city.

Palſies

Palſies of this kind, though moſtly agreeing in certain general marks, vary conſiderably in the proportion the ſymptoms bear reſpectively to one another. Thus, in ſome caſes, the ſenſation of the part is much impaired, and the ſtrength but little; in others, the ſtrength, and even the motion, is nearly deſtroyed, whilſt the ſenſation remains perfect. In ſome inſtances the natural heat is little or not at all affected, in others the parts remain cold. The ſame irregular proportion takes place among the other ſymptoms.

I believe the Bath water generally ſucceeds the beſt in caſes wherein the patients retain their ſtrength the moſt completely; but this is common to them with other remedies.

The retaining the ſenſation *perfect*, or nearly ſo, is a circumſtance, which, next to the preſervation of the ſtrength of the part, promiſes the beſt effects from the uſe

uſe of the Bath waters. There ſeem to be two cauſes of the loſs or defect of ſenſation in the part affected, in paralytic complaints, one ariſing from the loſs of the nervous influence, from ſome fault or diſorder immediately affecting the nervous ſyſtem; the other from a defect in the circulation, as when that is weak and tardy; as appears from the coldneſs and paleneſs of the parts affected, and the oedematous ſwellings which frequently accompany the diſorder. The Bath waters, eſpecially when externally applied, are often of ſervice in both theſe caſes, but in the former the recovery of the ſenſation is gradual, and moſtly keeps pace with the abatement of the other ſymptoms; but in the latter caſe I have ſeveral times obſerved, that after a few times uſing the Bath waters externally, the power of ſenſation has returned nearly completely, though the ſtrength had not been perceptibly increaſed. I always, however, found that in ſuch caſes the part ſo benumbed had been previouſly

viouſly cold and pale, and that when the feeling returned, the natural heat and colour of the limb was reſtored alſo.

Cautions reſpecting the uſe of the Bath waters in palſy.

The regulation of the uſe of the Bath waters muſt be deduced from a conſideration of the leading ſymptoms. If the diſorder be attended with ſuch circumſtances as indicate a tendency to fulneſs in the veſſels of the brain;* as, much redneſs of the cheeks, a ſenſation of weight or pain in the head, eſpecially if it be accompanied with vertigo; we ſhould be cautious how we adviſe the uſe of the waters either internally or externally, until theſe ſymptoms are removed. Bleeding in ſuch circumſtances is generally neceſſary, eſpecially of the topical kind, as by cupping, or by leeches, the latter

* It has been the opinion of ſeveral phyſicians, that the Bath waters are improper in ſuch paralytic diſorders as have been preceded by apoplexy. This opinion is however erroneous, as appears from the Caſes printed in the "Narrative of the Efficacy of the Bath Waters in Paralytic Diſorders," 1787. See pages 61, 62, 63, 64.

parti-

particularly; which laſt, if timely applied in ſuch a manner and in ſuch numbers as to draw three or four ounces of blood from the temples, will generally remove or abate theſe ſymptoms. Some purging medicines are alſo proper, but the choice of theſe muſt be left to circumſtances. In general ſome purgative of quick action, as ſome of the preparations of jalap, or of ſenna, may be eligible at firſt; but medicines of this kind are improper to be frequently repeated. Some of the combinations of aloes with bitters or aromatics, or both, are to be preferred when the object is rather to preſerve the body in a moderately open ſtate, than to produce a ſudden evacuation.

Should the ſtomach be affected with nauſea, or a ſenſation of weight and oppreſſion, particularly if the glands of the throat and ſtomach ſecrete a profuſion of viſcid glaſſy mucus, (no uncommon attendant on palſies) an emetic taken previouſly to entering upon a courſe of the waters

waters, and occaſionally repeated if need be during their uſe, is likely to be of the greateſt ſervice. In this caſe, I would recommend a rather powerful emetic, in preference to a weak one. An ounce and half or two ounces of wine of ipecacuanha, with two grains of *antiomonium tartariſatum*, will act not only more effectually, but with greater eaſe than a third part of the quantity.

Quantity in which the waters ſhould be taken, &c.

Even when the uſe of the Bath waters may be deemed ſafe or proper, conſideration muſt be had to the quantity taken in, when they are drank; and to the time of ſtay in the bath, heat of the water, &c. when they are externally uſed.—Common prudence, independent of medical information, dictates, that ſuch a remedy ſhould be cautiouſly adminiſtered. No preciſe quantity can be fixed on, but a ſmall glaſs, about a quarter of a pint contents, may at firſt be ventured on, and from the effects of that we muſt

judge how often it may be repeated, or the quantity enlarged.

If ſuch a quantity taken before breakfaſt feels eaſy, warm, and cordial, to the ſtomach and ſpirits, and excites no vertigo, pain, or ſenſe of fulneſs in the head or eyes, a ſecond glaſs of the ſame ſize may be taken the ſame day at noon, and this quantity gradually increaſed to a pint in the day, taken at two or three times, as convenience may ſuit, which ſeems a proper medium for the generality of people.

It is uſual for the Croſs-Bath water to be recommended at the commencement of a courſe of drinking the Bath waters, and this ſeems agreeable to reaſon, as well as juſtified by experience; eſpecially in caſes wherein there is any affection of the head, or indeed any tendency to plethora appears in the ſyſtem. After uſing this for ſome time, it may be proper to change it for the water of the King's or Hot Bath,

as

as ſuch change prevents in ſome meaſure that diſguſt which is apt to come on after a long trial of the Bath waters, and conſequently enables the patient to continue their uſe for a longer time.

The diuretic effects of the waters are indicatory of the ſafety of the trial of them in this complaint, as well as the foregoing, and ſhould by every method poſſible be promoted. The means before adviſed for this purpoſe are equally proper here as in the circumſtances before mentioned.

Cautions reſpecting the uſe of the bath.

The uſe of the bath is alſo neceſſary to be attended to. A ſhort ſtay, as of five or ſix minutes, is undoubtedly proper to be tried at the firſt commencement of bathing, and the former cautions relative to the coolneſs of the room, &c. are alſo neceſſary.

If this trial produces no ſymptoms that are diſagreeable, but on the contrary,

ſeems to improve the health, ſpirits, and ſtrength, a longer ſtay may be gradually indulged, until it comes to about half an hour; beyond which time I would recommend it to no perſon to ſtay in the bath; ſince, if laſſitude, fatigue, and diſguſt, are ſuffered to ariſe, the benefit of the bath for that trial, is nearly, if not altogether, loſt.

As the publick baths themſelves differ from one another in point of temperature, and as private baths of any degree of warmth that can be ſuppoſed to be required may be had at any hour, it will be neceſſary to ſpeak a few words on the degree of heat of the bath that ſeems moſt likely to ſucceed in this diſorder.

From the inſenſibility and coldneſs of the parts affected, that ſo uſually accompany this complaint, we might be led to conclude that a conſiderable degree of heat, or as great as the bodily feelings could well endure, would be moſt likely

to

to ſucceed. But we ſhould reflect, that the want of tone and ſtrength in the nervous ſyſtem incapacitates ſuch perſons from bearing the fatigue of ſtrong impreſſions of any kind. Every remedy that is intended to ſtrengthen the body ſhould be ſo managed, as to be *ſubordinate*, not *ſuperior*, to the powers of nature. If the ſtimulus to exertion be too violent, laſſitude and weakneſs, not cheerfulneſs and ſtrength, will infallibly be the conſequence. Agreeably to this hypotheſis, it has been found that a ſomewhat lower degree of heat than that of the natural heat of the King's and Hot Baths, is in general the moſt favourable to the recovery of ſuch patients. I have been informed from the beſt authority, that during the time the Hot-Bath (which is the one appointed by act of parliament for the uſe of the patients belonging to the Hoſpital) was rebuilding, and the patients of the Hoſpital were obliged to make uſe of the Croſs-Bath during that interval, thoſe afflicted with

with paralytic diſorders ſeemed to gain conſiderably more benefit than when the Hot Bath was uſed. The temperature of the Croſs-Bath is about ninety-four degrees; that of the Hot-Bath at leaſt eight degrees greater. In private practice I have generally adviſed a bath from ninety-two to ninety-ſix degrees in palſies. We ſhould alſo conſider that the patients are able to bear without faintneſs a greater degree of heat in an open bath, than in one that is confined in a room.

Uſe of the pump.

But in caſes where the affection is ſeated principally in the extremities, as in the arm or leg, it is more common to uſe the waters caſt in a ſtream upon the part by means of a pump. This, as it in a good meaſure ſaves the trouble of undreſſing, &c. is thought to fatigue the patient leſs than a greater degree of immerſion, whilſt at the ſame time it creates none of thoſe ſenſations and apprehenſions which are apt to affect people of delicate

ſenſations, at their firſt going into the bath. The force likewiſe with which the water is thrown adds to the ſtimulus, which however, being partial only, is more eaſily endured than a general application, and is leſs heating to the ſyſtem at large.

The degree or quantity of this application is meaſured by the number of times the handle of the pump is raiſed and thruſt down while the patient is expoſed to the ſtream of the water. It muſt not, however, be ſuppoſed, that the water falls upon the part with an irregular force, or by guſhes, as nothing of this kind is perceivable; and the number of ſtrokes of the pump is no more than a mode of meaſuring the time which paſſes whilſt the patient is expoſed to the ſtream of the hot water. From fifty to two hundred ſtrokes is the number generally directed to be taken at one time, which may however be increaſed or diminiſhed, according to the age, ſex, ſtrength,

ſtrength, or other circumſtances of the patient. The pump* likewiſe, as its application is partial only, may be properly uſed of a greater degree of heat than a bath for the whole body.

Time of uſing the baths.

If the patient uſes the publick baths, it is neceſſary that he ſhould go to them before nine in the morning, as they are emptied ſoon after that time, but a much earlier hour is generally choſen. If the private baths are preferred, they may be prepared at any time of the day, and I am not certain that any particular hour poſſeſſes advantages peculiar to itſelf. I have known equal benefit gained by perſons who bathed in the morning, at noon, and in the evening. Thoſe who prefer the latter hour, ſhould be careful to dine rather early, and to pay an eſpecial regard to moderation, with reſpect to the quantity and quality both of food and liquor.

* This mode of application is adviſed by Cælius Aurelianus, Lib. ii. cap. 1.

The

The ſummer ſeaſon of the year has been generally made choice of for the uſe of the waters, and both reaſon and experience have juſtified this preference. Extremely hot weather is, however, leſs proper than the temperately warm, as the former is apt ſometimes to cauſe violent perſpiration, if the bath be uſed during its continuance; a circumſtance always adverſe to its good effects upon the diſorder. This is particularly liable to take place in young perſons, on which account the uſe of the bath has been generally obſerved to ſuit beſt with perſons a little advanced in life.

Seaſon of the year beſt adapted to a trial of the Bath waters.

For the reaſons given above, thoſe who bathe or uſe the pump, with a view to the recovery of any weakened limb, ought not to encourage ſweating by any violent means. It may be uſeful in cold weather, if the patient bathes early in the morn, to go to bed after bathing for a ſhort time, as half an hour, or perhaps more, in order that the body, lately expoſed

poſed to the heat of the water, may be more gradually, and of courſe more ſafely cooled; but no extraordinary heat, as of bed-clothes, fires, or other artificial warmth, ſhould be employed. If the weather be warm, this precaution is generally unneceſſary, as well as confinement during the day; which laſt, however, is very neceſſary in ſevere weather.

Exerciſe of the limbs in the bath.

Motion of the limbs in the bath, as far as the patient is able, without over exertion and fatigue, is certainly proper. It ſhould be conſidered, that the waters afford us only the means of regaining the the power and command over weakened limbs, but the actual uſe of them muſt be acquired by the exerciſe and habit of moving them.

Length of time proper for the bath to be continued.

With regard to the length of time which it is proper that the uſe of the bath ſhould be continued, I can only ſay, that it ſhould be much longer in general than that in which a cure is uſually expected.

pected. A month or ſix weeks is the time commonly allotted for ſuch a trial; a term much too ſhort, even if we ſuppoſe that the whole of it was employed in ſuch a courſe, which is very ſeldom the caſe.

There is no doubt that perſons in different degrees of the diſorder require different periods of time for them to receive the whole of the benefit the uſe of the waters is capable of imparting; but it is worth notice that, on examination of the regiſter of the Bath Hoſpital, the average of ſtay of thirty-ſix* patients taken in ſucceſſion, who were all diſcharged cured of the idiopathic palſy, rather exceeded the ſpace of ninety days to each perſon; a time which is well known to exceed by at leaſt one half that

* Theſe were the whole of the patients diſcharged as *cured* of this diſorder during the years 1776, 1777, 1778, and 1779. The whole time of their joint ſtay was 3269 days, which being divided by 36, gives nearly 90.806 to each perſon.

which

which is uſually allotted for a trial of the Bath waters, by thoſe who come here at their own expence.

It is proper here to obſerve, that although it is certainly true that the ſtomach, by a long uſe of the Bath waters, is apt to ſhew ſigns of loathing and diſguſt, which evidently limits the period for drinking them, yet that no ſuch circumſtances take place reſpecting the uſe of the waters externally, but that in this way they may, and often are, continued to an indefinite time, without any limitation from ſymptoms of ſuch a nature.

It appears from the regiſter* of the Bath Hoſpital, that of 730 patients received into the houſe from January 1ſt 1776, to December 31, 1785, for *Palſy from no aſſignable cauſe*, there were, *cured*

* See "Narrative of the Efficacy of the Bath Waters in various kinds of Paralytic Diſorders," p. xii. Preface.

87,

87, *much better* 287, *better* 123, *no better* 202, *dead* 31. The proportion of deaths is nearly as 1 in 23.548.

The regimen and manner of life proper for perſons labouring under paralytick diſorders, who are under a courſe of the Bath waters, is not in any wiſe ſpecifick or particular. Moderation in the quantity and quality of food is proper in a general view of the ſubject; but abſtinence, except in plethorick habits, (and particularly in ſuch caſes as have been attended with apoplexy) is by no means proper. A diet rather generous than abſtemious, is to be preferred in moſt inſtances. We ſhould, however, conſider, that as the waters themſelves are powerfully ſtimulant, it is neceſſary to be cautious of indulging *too* freely either in high-dreſſed victuals, or fermented or ſpirituous liquors. The ſame may be ſaid of exerciſe, and other articles of regimen. It is alſo neceſſary to ſupport the ſpirits, and entertain or amuſe the mind; but care

care muſt be taken, leſt by over attention to theſe circumſtances, we ſubſtitute fatigue and diſguſt in the place of pleaſure.

In palſy from an evident cauſe.

The Bath waters have been found ſtill more ſucceſsful in thoſe kinds of paralytick affections that are produced by ſome *evident* cauſe.

In palſy from cold.

Expoſure to violent cold is ſometimes productive of this diſorder, eſpecially if moiſture be combined with it. Thoſe obliged to walk out among the ſnow, or to labour in wet places during ſevere weather, are ſometimes attacked in this manner.

It appears from Dr. CHARLTON's account, that, out of twenty-four patients received into the Bath Hoſpital for palſies of this kind, only two received no benefit, and none died;—a convincing proof of the efficacy and likewiſe of the ſafety of the Bath waters in ſuch caſes.

From

From a later publication* it appears, that out of four caſes, which were all that were noticed in the regiſter from January 1, 1776, to December 31, 1785, (though poſſibly more might have been found ſo circumſtanced, had an accurate enquiry been made at the time of the patients coming in) that two were *cured*, one *much better*, and one *no better*;—a proportion that agrees perfectly well with the former account.†

In palſy from heat.

I have ſeen a caſe wherein the paralytick affection was (as far as could be traced) cauſed by expoſure of the head to the ſun's rays, by a man's incautiouſly ſleeping in the ſun with his head unco-

* See Narrative above quoted.

† From the hiſtory of a paralytic caſe, recited in page 22, Caſe VII. of the "Narrative of the Efficacy of the Bath Waters in Palſies," above quoted, it ſeems probable, that the ſudden application of cold internally, as by drinking cold water when the body is heated, may produce this diſorder. This patient, however, after ſeven weeks ſtay, was diſcharged cured.

vered,

vered, in extremely hot weather. Various remedies were adminiſtred, before a trial was made of the Bath waters, but all without effect; but after the uſe of the bath and pump for a fortnight, he was perfectly reſtored. The diſorder in this inſtance depriv'd the patient nearly altogether of the uſe of his ſpeech and limbs.

Palſy from external accident.

External accidents, it is well known, have often produced palſy, when an injury has been done to the brain or ſpine of the back. Two caſes of this kind are deſcribed in Dr. CHARLTON's Enquiry; the firſt, where the diſorder was produced by a blow on the head from a fall; the ſecond, from a diſtortion of the third and fourth vertebræ of the neck, by a ſimilar accident. The former of theſe caſes was not ſent to the Bath Hoſpital until upwards of a year after the accident; the latter not until ſix months had elapſed. The former, after a ſtay of 46 days only, was diſcharged greatly relieved;

lieved; the latter appears to have received a perfect cure. An involuntary and inſenſible diſcharge of urine, and a tenſe ſwelled belly, were ſymptoms common to both. The uſe of the pump upon the part affected, appeared, in both theſe inſtances, to be the principal agent in the cure.*

Out of nineteen caſes of palſy from external accident, admitted from May 1751, to May 1764, ſixteen were diſcharged *cured*, two were *no better*, and one *dead*.

Four caſes of palſy from external accident are related in the Narrative publiſhed in 1787 by the Faculty belonging to the Bath Hoſpital; in two of which a cure was performed, in another much relief was afforded, and the third was no better. Out of thirteen patients of this kind received into the Bath Hoſpital from the end of the year 1775, to the end of

* See Dr. CHARLTON's Enquiry, p. 21—58.

the year 1785, two were *cured*, five were *much better*, two were *better*, three *no better*, and one *dead*.

Diſtortion of the vertebræ from diſeaſe, ſometimes attended with palſy.

Diſtortion of the vertebræ ſometimes takes place, without any external violence; and this is often accompanied with palſy, generally affecting the lower extremities. Whether this palſy be the conſequence or the cauſe of the diſtortion of the vertebræ, or merely a concomitant ſymptom, is not fully determined, nor is it the purpoſe of this work to diſcuſs; it is ſufficient here to point out the efficacy of the Bath waters in ſuch complaints.

Dr. CHARLTON has related a remarkable caſe of this kind, wherein ſix of the vertebræ of the back ſuffered a partial diſlocation.* This was preceded by great pain, and followed by an entire loſs of motion, and nearly of ſenſation, in the lower limbs; which were beſides cold to

* CHARLTON's Enquiry, p. 62.

the

the touch, of a livid hue, always covered with a clammy ſweat, and the blood-veſſels preternaturally diſtended. The pains in the back, which preceded the palſy, ſtill raged with the utmoſt violence. To add to theſe diſcouraging circumſtances, the diſorder had continued above a year before the patient applied to the Bath waters for relief. The firſt thing adviſed, in the very judicious courſe he was directed to purſue, was the uſe of the bath; after trying which for a few weeks, his back was pumped upon, and he was ordered, on coming out of the bath, to be ſuſpended in a ſwing as long as he could bear it; after the uſe of which the diſtorted vertebræ were anointed with an emollient liniment, and covered with a ſoap plaiſter. No internal medicines were adminiſtered, ſave what was neceſſary to keep the body open.——For the firſt eight months no alteration was perceived, except a gradual abatement of the pain; at the end of this period, he could move his toes; two months afterwards

he could walk with crutches; and in leſs than three months afterwards, he was reſtored to the perfect feeling and uſe of his limbs.

Two caſes of a ſimilar kind are related in the Narrative before quoted, in one of which the operation adviſed by Mr. POTT had been tried without effect. This patient, however, after a long trial of the waters, amounting in the whole to near ſeventeen months, was diſcharged cured on the 20th of March, 1783. This caſe was the more diſcouraging, as *one* of the vertebræ *only* was diſplaced;—a circumſtance which has been obſerved by the ſurgeons belonging to the Hoſpital to be leſs favourable to a cure than if ſeveral were concerned.*

Another caſe is related in the ſame work, where the curvature of the ſpine was very conſiderable, which was *cured*

* Narrative, p. 46, 47.

by

by the uſe of the Bath waters in ſomewhat leſs than the ſpace of eight months.

Dr. CHARLTON has remarked, with great propriety, that it is happy for ſuch ſufferers to be informed that the waters generally ſucceed in this kind of palſy. Even thoſe the moſt diſadvantageouſly circumſtanced, have been ſome of them *cured*, and others ſo far *relieved*, as to render life comfortable, when compared with the ſtate of miſery they had before ſuffered.

It is in general obſerved, that all paralytick diſorders that are attended with pain are much relieved by theſe baths; and that the abatement of the pain is generally the firſt ſign of amendment.

It has been thought, that pain coming upon a paralytick limb, which before was defective in point of ſenſation, is a mark of recovery, and this indeed appears to be in ſome inſtances true; but I have uniformly

formly obſerved, that when pain was among the firſt ſymptoms of the diſorder, (which is not an uncommon circumſtance) the increaſe of ſuch pain was always a mark of the aggravation, and its abatement of the diminution of the complaint.*

Of forty perſons thus afflicted, nine were *cured*, three *much better*, eight *better*, eighteen *no better*, and two *dead*.

Palſy cauſed by lightning.

In the Narrative above referred to are two remarkable inſtances of palſy cauſed by lightning. The affection in one of theſe caſes was general, in the other it was a hemiplegia; but whether the latter of theſe was cauſed by the ſtroke of lightning, or by the patient's remaining ſenſeleſs upon the wet ground during the night, after his being ſtruck down, is not abſolutely certain. Both theſe perſons were diſcharged *much better*.

* Ες αναπληρωσιν ὃ κακιων απονιψη. Aretæus.

Some

Some mineral ſubſtances, eſpecially thoſe of the metallic kind, have been remarkable for producing paralytick ſymptoms. Palſy from mineral ſubſtances.

Of theſe, lead is the principal, the effects of which in this way are well known. This metal is capable of producing morbid ſymptoms, either when ſwallowed in a ſtate of ſolution, or even in ſubſtance; or by its particles or its vapour being drawn in by the breath; or by external contact, particularly if the metal be heated. Lead.

The firſt ſymptoms of its malignity generally appear in the ſtomach and bowels. A ſenſe of weight* and pain generally about the pit of the ſtomach, ſickneſs, and coſtiveneſs, mark the firſt appearance of this diſorder. Theſe

* See Dr. WARREN's very accurate account of the nature and cure of this diſorder; Medical Tranſactions, vol. II. and TRONCHIN de Colica Pictonum, cap. vi.

ſymptoms,

ſymptoms, if not attended to, and alleviated by proper remedies, among which opium bears the firſt place, are ſoon aggravated. Bilious vomitings, difficulty of paſſing the urine, and violent ſpaſms of the abdominal muſcles, form the next ſtage; and if it be yet farther neglected, a palſy of the wriſts comes on, and ſometimes, when the complaint is more violent, deafneſs, delirium, and epileptick fits, put a quick termination to the ſcene of life.

It is doubtful if the colick in cyder countries, Devonſhire particularly, be not the ſame diſeaſe with the one above deſcribed, and produced by ſome mixture of this metal with the cyder. It is not denied that they exactly reſemble one another; and that the one which we know with certainty to be produced by lead, is attended with ſymptoms of a very peculiar kind, and totally diſſimilar to any that either reaſon or experience would lead us to conclude were produced by

by the fermented juice of a fruit ſo well aſcertained to be of an innocent nature as the apple. This, however, is no place for ſuch a diſcuſſion; but as the complaint is undoubtedly the ſame, even granting it ſhould be capable of being produced by different cauſes, I ſhall conſider it here under the general appellation of the Lead Colick. Dr. CHARLTON has recited ſeven caſes of this kind, all agreeing in the leading ſymptoms, of commencing with colick, and terminating in a palſy of the wriſts.

The firſt ſtage of this diſorder we know at the Bath Hoſpital only by report, but the accounts are too uniform to admit of the leaſt doubt of the nature of the ſymptoms. Thoſe that I have ſeen were all affected with a weakneſs of the wriſts, but had no pain, or other diſorder of the bowels; which I believe almoſt always ceaſes when the hands become paralytick.

The

The general practice at the Bath Hoſpital in this complaint is, firſt to adminiſter a gentle doſe of purging phyſick, after which the waters are directed to be drunk cautiouſly; and if any coſtiveneſs ſhould return, the cathartick is occaſionally repeated, or ſome opening mixture or pill directed to be taken when neceſſary. In a few days the uſe of the pump upon the wriſts and fingers is directed, and ſometimes the bath joined with it. The pump is generally uſed daily, from fifty to two hundred ſtrokes at a time. If the amendment goes on favourably, no other method is neceſſary; but it often happens, that after the uſe of the waters for about a month or ſix weeks, and after conſiderable benefit has been received, the amendment will ſeem to be at a ſtand. In this caſe it is uſual to adviſe the uſe of the waters to be laid aſide, and bliſters to be applied ſometimes to the wriſts, and at others to the external muſcles of the arm between the elbow and the wriſt, and to be kept running a few days, and then

ſuffered

ſuffered to heal. The pump is then applied a ſecond time, and, it is obſerved in moſt inſtances, with much better effect than before. This proceſs is repeated, if neceſſary, two or three times; and it often happens, that very obſtinate and deplorable caſes are thus happily recovered.

It is a common obſervation, that in caſes where the ſymptoms are violent, and the complaint is of long ſtanding, or has recurred repeatedly, that the muſcles which form the ball of the thumb are often waſted in ſuch a manner as to leave a conſiderable hollow inſtead of a prominence in that part. This circumſtance is generally looked upon in the London hoſpitals as a mark that the patient will not recover the uſe of his hands. Many of the patients, however, ſent to this place have recovered the ſtrength of their wriſts and hands, notwithſtanding this ſymptom. I have ſeen two caſes of this complaint, in which the deltoides

deltoides muſcles were ſo much waſted, as to give the ſhoulder the appearance of being diſlocated downwards into the axilla; both of theſe patients, however, got well.

The number of patients admitted into the Bath Hoſpital for this complaint, from May 1751 to May 1764, amounted, according to Dr. CHARLTON's account, to two hundred and ſeventy-ſix, including thoſe ſaid to be from mineral effluvia. Of theſe two hundred and fifty-ſix were *cured* or *benefited*, ſix were *no better*, ten *died*, and four were *improper* ſubjects for a trial of the waters.

By a later account,* it appears, that, of two hundred and ſixty-four patients admitted from Jan. 1, 1776, to Dec. 31, 1785, one hundred and ſeventeen were *cured*, one hundred and thirty-eight were *much better*, five were *better*, two *no better*, and only two *dead!*---What proof

* Narrative above quoted.

can

can be more ſatisfactory of the ſafety as well as efficacy of the Bath waters in this ſpecies of palſy?

Lead, however, although the principal, is not the only mineral ſubſtance that poſſeſſes the power of producing paralytick ſymptoms. In the Medical Muſeum there is an account of a perſon who loſt the uſe of his hands by cleaning braſs wire; and in the Narrative of the Caſes at the Bath Hoſpital, before referred to, is an account of one very ſimilar, wherein the weakneſs of the hands was produced by the pointing of pins. This patient was, however, after a ſtay of one hundred and forty-nine days, diſcharged nearly cured.——It is mentioned in the above work, that ſeveral patients injured by working in the braſs foundery have been cured in the Bath Hoſpital. Copper.

The Bath waters have alſo been found ſucceſsful in thoſe paralytick affections that

Mercury. that are cauſed by mercury, eſpecially in ſuch perſons as are expoſed to its fumes, as gilders, &c.

Arſenick. Arſenick is mentioned by writers as productive of palſy, if gradually taken into the body. Of this we have had ſeveral inſtances lately in the Bath Hoſpital, three of which are recited in the Narrative* before quoted. The ſymptoms were much the ſame as are commonly deſcribed to attend the taking this poiſonous mineral. It ſhould, however, be noticed, that the palſy in all theſe inſtances ſeemed to begin from the extremities, and to proceed gradually from thence to the trunk of the body, and not to affect one ſide more than the other. The Bath waters had the happieſt effects in all the above caſes.†

Palſies

* Caſes XVI. and XVII.

† I am inclined to ſuſpect, that the uſe of antimony, if it be long continued, has ſome effect of the ſame kind. I remember an inſtance where the uſe of tartar emetick, in ſmall

Palſies ſeem ſometimes to be the conſequences of other diſeaſes. Thus they have been remarked to come on after the termination of fevers. Several caſes of this kind are deſcribed in Dr. CHARLTON's Enquiry, and the Narrative above quoted. It does not appear to have been produced by any particular ſpecies of fever. In Dr. CHARLTON's Work it is deſcribed in one inſtance as coming on after a miliary fever, and in two others as ſucceeding fevers of another kind. In

Palſy from fever.

ſmall doſes, was preſcribed by the late Dr. DELACOUR and myſelf for a bilious complaint, with the greateſt advantage. The patient, however, thinking its uſe more univerſal than it really was, acquired a habit of taking it frequently, and on the moſt trifling occaſion. This, though it neither for ſome time vomited him nor made him ſick, and only acted as a gentle purgative, in time weakened his ſtomach ſo much that he could retain nothing long upon it, and he was obliged to have recourſe to the Bath waters to cure the effects of his medicine.——It is obſerved, that dogs will become paralytick in their hinder parts, if the *crocus metallorum*, which is often put into the water they drink to cure them of the mange, be left in it for a long time after the diſeaſe is cured. A remarkable inſtance of this fell under my own obſervation.

the

the Narrative it is mentioned as coming on in one caſe after an intermittent fever, in another after a putrid fever, and in two others after fevers of which no more particular account is given, ſave that they were of the continued kind.

Nor is the nature of the palſy itſelf in any wiſe ſpecifick or peculiar. In the firſt inſtance related by Dr. CHARLTON, an univerſal ſhaking palſy was produced, in the two others a dead palſy. In the caſes mentioned in the Narrative, a hemiplegia was produced in one inſtance, a palſy of the lower limbs in two, and a palſy of the hands in another.

It appears from Dr. CHARLTON's Enquiry, that from May 1751 to May 1764, ſeventeen caſes of this kind were brought to the Bath Hoſpital, of which thirteen were *cured* or *benefited*, two were *no better*, two were *improper* for a trial of the waters, and none *dead*.

By

By the account given in the Narrative, it appears, that from January 1, 1776, to December 31, 1785, fifteen patients of this kind were admitted; of whom five were *cured*, nine *much better*, one *no better*, and none *dead*.

It may appear extraordinary, that no medical writer (thoſe only excepted who have written on the ſubject of the Bath waters) has mentioned fever as the remote cauſe of palſy. I can find no hint of it among the authors of antiquity; and VAN SWIETEN, whoſe induſtry in collecting materials of every kind to elucidate the hiſtory of diſeaſes was ſo remarkable, has not made any remark that I can find leading hereto.

HOFFMAN, likewiſe, has never recounted fever among the cauſes of this diſeaſe.

HUXHAM alſo, who has written profeſſedly on the ſubject of fevers, has

never mentioned palſy among their conſequences.

The reaſons of this omiſſion, I apprehend to be, that ſuch palſies very ſeldom happen among thoſe ranks of people with whom medical practice is chiefly converſant. It is almoſt ſolely found among the diſtreſſed and indigent, and even among them is not ſo common* as to be noticed on account of its cauſe, unleſs in a place like the Bath Hoſpital, where great numbers of paralytick patients are collected together, and a more accurate judgment concerning the cauſes of the diſorder may on that account be formed.

It is my opinion, that palſies of this kind are owing in a great meaſure to the neglect and hardſhip which the poor of-

* In Dr. CHARLTON's State of the Bath Hoſpital, the number of *palſies from fever* was to the whole as 17 to 1053, or nearly as 1 to 61.882. In the ſtate given in the Narrative, the proportions were as 15 to 1102, or nearly as 1 to 73.298.

ten undergo, when unable to provide for themſelves, and when from weakneſs, and the effects of a violent diſorder, ſuch deficiences in point of proper food, clothing, warmth, change of linen, and attention to the prudent admiſſion of freſh air, become much more diſtreſſing. Cold and damp* will, we know, produce palſy, even in people who are in health at the time of ſuch trials; how much more then muſt the want of the comforts of life, which in ſuch circumſtances become abſolutely neceſſaries, affect thoſe who are languiſhing under the effects of a violent diſeaſe. The following caſe, which lately came under my care at the Bath Hoſpital, indicates this very ſtrongly:

Thomas Lucas, aged 20, a man bred to farming buſineſs, of the pariſh of Llanryddyan, near Swanſea, Glamorganſhire, was ſeized in the month of December

* See Caſes III. V. VI. VII. VIII. and XXII. in the Narrative, and John Weſtlake's Caſe in Dr. CHARLTON's Enquiry, page 71.

1787, with a low nervous fever, which was then epidemical in that country. During the continuance of this he lay in a ſtate of delirium for near a fortnight, not only deſtitute of all medical aſſiſtance, but likewiſe of almoſt every kind of neceſſary due to his ſituation, as of proper food, clothes, warmth, &c. Towards the latter part of this time, an hemiplegia of the left ſide came on, after which his fever went gradually off, leaving him much debilitated generally, as well as what was owing to the paralytick attack. He, however, ſoon recovered his general loſs of ſtrength, but the weakneſs of his ſide continued. Electricity had been tried upon him, and ſeemed to produce ſome good effects, but theſe were not permanent. He was in no pain, his bowels regular, his appetite good, but his ſleep at nights interrupted. The above was the ſtate of this man's health when he was admitted into the Bath Hoſpital, on May 7th, 1788; and on Dec. 24th of the ſame year, after a ſtay of 231 days, he was diſcharged *better*.

Rheumatiſm, when chronical, often brings on a degree of weakneſs of the limbs much reſembling palſy. It differs however, in this reſpect, that the weakened parts retain the ſenſation perfect, and the temperature is ſeldom altered. From the account given in Dr. CHARLTON's Enquiry it appears, that of twenty-ſeven patients, twenty-two were *benefited*, three were *no better*, one *dead*, and one *improper to be continued*.—The account given in the Narrative is leſs favourable; in that two out of three received no benefit. Palſy from rheumatiſm.

Palſy has ſometimes, but not very often, proved an attendant on women's lying-in, or miſcarriage. This ſometimes appears in form of an hemiplegia, but I believe moſt commonly falls on the lower limbs. This may in ſome caſes proceed from cold and hardſhip during the time of confinement, but this is not always the caſe; as I have known it happen where nothing of that kind could take place. From its generally affecting the Palſy from lying-in.

lower extremities, it is to be ſuſpected that it ariſes from ſome injury received in delivery. Two caſes are related in Dr. CHARLTON's Enquiry,* both of which were hemiplegias, and one of them combined with convulſive affections. Both caſes received great benefit.

Two caſes of a ſimilar kind are related in the Narrative, ſave that the diſorder here affected the lower extremities. One of theſe was diſmiſſed *much better*, the other was *cured*. It appears by the ſtate given in the Narrative, that four out of five patients admitted in ſuch a ſtate, were *cured* or *benefited*.†

Pages 28, 29.

† Dr. CHARLTON ſays that he had known nine or ten more inſtances, beſides thoſe ſpecified in the table, of women who became paralytick in their lower limbs from accidents attending their lying-in; all of whom, except two, were cured, or conſiderably benefited; and one of thoſe who were not relieved had been ſeven or eight years in that ſtate before ſhe made a trial of the Bath waters.

Enquiry, page 47.

Such

Such is the beſt account I have been able to collect of the efficacy of the Bath waters in palſies; which I doubt not will prove highly ſatisfactory, as it fully proves, from evidence that is incontrovertible, their powers in the relief of a diſorder that affords fewer indications to be purſued, and leſs proſpect of ſucceſs, than almoſt any other to which the human frame is liable.-----Before I diſmiſs the ſubject, I wiſh to add a few obſervations.

It is a common opinion,* that paralytick complaints are in the preſent age more frequent among young perſons than they were formerly. What proportion the number of palſies might bear to the ages of thoſe afflicted with them a century or more ago, I have no evidence to determine; but the following table, to which I will beg leave to add a few

* This opinion is adopted by Dr. CHARLTON. See Enquiry, page 5, ad imum.

remarks,

remarks, affords a preſumption that nearly forty-ſeven years ago (a period beyond which but few people's memory of medical practice extends) palſies were at leaſt as common among young perſons as they are in the preſent age.

TABLE

TABLE of the ages of patients received into the BATH HOSPITAL *for Palsies, without any assignable cause, during the years prefixed in the margin, containing three periods of seven years each.*

	Ann. Dom.	AGES of the PATIENTS.				
		10 and under	From 10 to 20	From 20 to 30	From 30 to 40	40 and upwards
1st PERIOD.	1742			12	13	9
	1743		4	6	3	4
	1744	1		4		2
	1745			2	4	3
	1746	1	5	7	3	8
	1747	1	4	7	7	3
	1748		3	6	7	11
2d PERIOD.	1752		3	7	6	6
	1753	2	3	7	8	14
	1754	1		5	5	8
	1755	2	2	8	11	9
	1756	1	2	8	5	13
	1757	2	1	3	4	12
	1758	2	3	7	3	9
3d PERIOD.	1776	1	6	10	17	19
	1777	1	3	8	17	26
	1778	3	4	11	8	20
	1779	3	2	12	11	28
	1780		3	10	11	19
	1781	1		4	6	18
	1782	1	2	6	10	27

The firſt period in the foregoing table contains the years from the beginning of 1742, (which I believe is the firſt year that the regiſter was duly kept, and not long after the Hoſpital was opened) to the end of the year 1748, being a period of ſeven years. The number of perſons under thirty years of age received into the Hoſpital for idiopathic palſies during that time, was 63, and the number exceeding that age was 77; which is nearly as 1 to 1.2222.

The ſecond period is of equal duration, and extends from the beginning of the year 1752, to the end of the year 1758. The numbers in this time were, of people under thirty years old, 69, and of thoſe who exceeded that age, 113; which is nearly as 1 to 1.6377.

The third period begins from the beginning of the year 1776, and continues to the end of the year 1782. The numbers during this time, under thirty years old

old, were 91, and thoſe exceeding that age were 247, or nearly as 1 to 2.7204.

The regiſter is not in every caſe accurate with reſpect to ages, they being in ſome inſtances not ſpecified, which has made the numbers appear ſmaller than they would otherwiſe have done; none being noticed in the above account, but thoſe whoſe age was put down, which I make no doubt is correct. Nor is there any reaſon to think that, if the ages of thoſe perſons which are not ſpecified, could be aſcertained, it would alter materially the proportion as it ſtands in the foregoing table.

If this account then be taken as a guide, (and I know of none better entitled to be ſo) the proportion of perſons attacked with palſy under thirty years of age was greater upwards of forty years ago than at preſent. Might not this be cauſed by the drinking ſpirituous liquors, which was then ſo common a practice

practice among the lower ranks of people?

The ſhaking palſy was obſerved many years ago to be leſs benefited by the uſe of the Bath waters, than the other kinds. Dr. CHARLTON notices, that out of four caſes of this ſort one only received benefit. In the Narrative it is mentioned, that of twenty-one ſhaking palſies one only was *cured*, three were *much better*, five *better*, and twelve *no better*. This fully confirms the former opinion.

Dr. CHARLTON obſerves,* "Where "the waters make in hemiplegia a com- "plete cure, their good effects are ſpee- "dily apparent; and where they operate "more ſlowly, or the patient finds little "alteration after ſome weeks' trial of "them, the ſervice they then do is partial "only. In theſe inſtances the leg is uſu- "ally the only part, as in compleat cures

* Enquiry, p. 41.

"it

"it is the firſt, that recovers." Every day's experience at the Bath Hoſpital verifies the above remark.

Uſe of the Bath waters in gout.

The gout is another diſorder wherein the Bath waters have been long, and with juſtice, celebrated for their efficacy. This diſorder, though probably of one ſpecies only, appears in ſo many forms, and accompanied with ſuch a variety of ſymptoms, as to make the indications relative to it vary almoſt as much in its different ſtages and circumſtances, as if the patient laboured under ſo many different diſeaſes. I ſhall endeavour to explain the uſe of the Bath waters in ſuch different ſituations as well as I am able.

The Bath waters are well ſuited to that kind of gout called by Mr. SAUVAGE the Winter Gout, which is indeed the moſt common of any. This uſually comes on towards the decline of life, and does not in general keep regular periods, but is ſubject to recur throughout the whole year,

year, the ſummer months excepted. This appears to have been the kind of gout which SYDENHAM has deſcribed ſo well, and under which he ſeems to have laboured. This kind of gout* is always attended with ſigns of weakneſs of the ſtomach and organs of digeſtion, ſuch as imperfect concoction, and nauſeous eructations, flatulence, and want of appetite.

Theſe ſymptoms, at the beginning of the diſorder, generally precede the paroxyſm, and when that is over, go off of their own accord; but when the paroxyſms have been repeated often, ſuch ſymptoms are apt to remain a conſiderable time after the fit is over, and often during the whole interval between one fit and another; and there is no doubt that this ſtate of the viſcera renders the ſubſequent attacks apt to be longer in

* Ventriculi cruditate atque Απεψια ad ſeptimanas aliquot æger laboraverit corporis inſuper intumeſcentiâ quaſi ventoſâ et gravitate quæ indies augetur donec tandem detonet paroxyſmus.——SYDENHAM, p. 436.

duration,

duration, and more liable to fall upon the ſtomach and bowels. To keep theſe organs then, as far as poſſible, uninjured in the performance of their functions, muſt be a principal object with thoſe who attend perſons afflicted with this diſorder; and nothing ſucceeds more frequently or happily in fulfilling this intention, than the Bath waters internally taken.

Their effects in this way muſt not be confounded with thoſe of other medicines, which are commonly eſteemed to have the power of ſtrengthening the ſtomach; as warm aromatick bitter preparations, and ſuch like. The Bath waters, in weakneſs of this kind, proceeding from a gouty cauſe, ſcarcely differ leſs from ſuch in their effects than in their ſenſible qualities, and have often been found to exert their efficacy in the happieſt way, when ſuch remedies as I have juſt alluded to, have loſt all their force; and frequently when the ſtomach itſelf owes its

its debilitated ſtate in no ſmall degree to its having been overcharged with ſtimulant and heating ſubſtances.

The ſituation here deſcribed, occurs frequently at this place, among perſons who have produced or aggravated the gout by intemperance in living, and particularly thoſe who have indulged in ſtrong liquors. Such perſons are not only ſubject to the ſymptoms above deſcribed, but are often afflicted with the actual preſence of the gout in the ſtomach and bowels, indicated by the ſpaſmodick pain of the part, which is often attended with ſickneſs and vomiting, and ſometimes with a ſenſe of heat, and at others of coldneſs and inſenſibility of that organ. In ſuch caſes it is ſcarcely poſſible to deſcribe the grateful ſenſation which the Bath waters impreſs upon the ſtomach. They act often as the moſt powerful cordial, without any of the heating and irritating effects of ſpirituous preparations; but on the contrary, generally

repreſs

repreſs thoſe irregular fluſhings of heat which often accompany depraved digeſtion, and quench thirſt (often a very troubleſome attendant on ſuch a ſtate of the body) better than any other liquid. Their good effects are ſoon manifeſted upon the appetite, which is in a ſhort time improved, together with the powers of digeſtion; and many kinds of food, which before could not be taken without nauſea, or, if ſwallowed, not retained without great trouble and uneaſineſs, are eaten with pleaſure, and digeſted with eaſe. It frequently happens alſo, that the bowels, from being coſtive, become regular, by the uſe of the Bath waters, as well as the ſecretions by urine and perſpiration, the ſtrength and ſpirits return, and the whole of the vital functions are in a great meaſure reſtored.

The above account of the effects of the Bath waters would be much too flattering, if it were deſcribed as univerſally

taking place. It muſt not be expected that the Bath waters can act in a manner ſo powerful and happy, unleſs a conſiderable degree of ſtrength and vigour remain in the conſtitution, and there be no ſigns of ſchirrhus, or other local affections of the liver or any of the viſcera, being actually formed. Nor muſt it be inferred from what has been ſaid, that the waters will continue repeatedly to exert the ſame powers which they manifeſted the firſt time of trial. However flattering the ſtate of the health ſo reſtored may appear, experience has but too often proved that a repetition of the former irregularities will ſoon diſappoint ſuch hopes, and reduce the patient generally to a worſe ſtate than in the former inſtance. The ſame remedy may, indeed, again ſucceed in ſome degree, but the probability of ſucceſs is diminiſhed, and if it takes place at all, the effects are more ſlowly produced, and the recovery leſs complete.

If,

If, indeed, when the diſorder is owing to exceſſes of this kind, and the patient will, by a reſolute and ſteady exertion, follow a regular courſe of life, experience hath ſhewn, that when age is not too far advanced, and the viſcera remain free of any permanent local diſeaſe, that the health may be, in fortunate circumſtances, almoſt altogether recovered. This event is more likely to take place with thoſe who have ſpared their conſtitutions in youth, and made free with them afterwards, than with ſuch as have commenced their irregularities in early life. The Bath waters agree much better with perſons of the former than of the latter deſcription. The latter ſeem to poſſeſs in many inſtances the imbecility of age, combined with the irritability of youth. A cordial remedy, like the Bath waters, appears to be indicated; but when tried, the ſtimulus proves to partake too much of an inflammatory nature. This premature mixture of the diſeaſes of age with the

habits of youth, forms a ſituation perplexing to the phyſician, and highly diſtreſsful to the patient.

This embarraſſment is much aggravated, if ſpirituous liquors have laid the foundation of the complaint, as is too often the caſe; ſince theſe injure the ſtomach, liver, and nervous ſyſtem, much more than ſuch as are of the ſimply fermented kind. I do not mean to ſay that ſuch caſes can admit of no relief from the Bath waters, but muſt obſerve that the proper uſe of ſuch a remedy is matter of great delicacy in point of management, and, I am ſorry to add, of uncertainty in the event.

I muſt by no means be underſtood to charge every perſon thus unſeaſonably, as it ſhould ſeem, according to the general courſe of nature, afflicted with the gout, as being the authors of their own malady. We meet with inſtances but too frequently, wherein the children ſuffer

ſuffer for the faults of their progenitors; and ſome occur, where, though the diſorder be evident, this connecting cauſe cannot be traced. I am ſorry to own, that I have ſeen people born of healthy parents, and who had always led the moſt regular and indeed exemplary life, labouring under the moſt afflicting ſymptoms of the irregular gout at an early period of life, with all the functions of nature weakened and impaired, and yet with ſuch an irritability (not only of the nervous, but of the circulatory ſyſtem alſo) as not to be able to endure the uſe of thoſe remedies which are uſually adminiſtered to excite the vital powers. In ſuch caſes, I have ſeen the Bath waters, adminiſtered internally in the moſt cautious manner, excite ſuch an inflammatory diſpoſition in the ſyſtem as to require the immediate uſe of evacuations, which were ill ſuited to the general ſtate of the patient's health. Inſtances, however, of the *unſolicited* gout to the degree here deſcribed, are not, I believe, very common.

I ſhall

I ſhall ſay more on the uſe of the Bath waters in caſes of the above deſcription, when I come to ſpeak of their external application in the gout.

I have before mentioned, that thoſe who apply in ſuch circumſtances to the Bath waters, muſt do it whilſt a certain degree of vigour and ſtrength be left in the ſyſtem, elſe little benefit is to be expected from their uſe. This, though it ought to warn thoſe affected as above-deſcribed to make a trial of this remedy before their diſorder is too far advanced, need not diſcourage from the experiment people whoſe ſtrength is much diminiſhed, and their organs of digeſtion greatly diſordered; provided no certain indication of ſchirrhus, or other bad affection of the viſcera, have appeared.

We are liable to err in nothing more frequently, than in our eſtimation of the powers of life. We at leaſt as often depreciate as overrate them. The efforts

of

of nature appear ſometimes to be ſubdued and extinguiſhed, when they are only as it were clogged and obſtructed; and remain capable of being excited, by proper means, into vigorous and powerful exertions, to reſiſt or overcome diſeaſe. No ſituation exemplifies this more ſtrongly than that of which I am now ſpeaking. Every medical practitioner at this place has ſeen inſtances of people labouring under want of appetite, pain, and ſpaſm of the ſtomach and bowels, together with all the other ſymptoms of depraved digeſtion, and want of power in the proper organs to perform their functions, joined to a very great degree of weakneſs, both of the body and of the ſpirits, relieved by the uſe of the Bath waters. The recovery, in ſuch caſes, is particularly remarkable, for its taking place ſo quickly after the commencement of the trial of the remedy. A few days will frequently work ſuch a change in the ſituation of the patient as would be ſcarcely credible, were it of leſs common occurrence.

occurrence. The appetite is often reſtored altogether, the wandering ſpaſms and pain ceaſe, the natural reſt returns, and the ſpirits are raiſed to their proper pitch. The ſtrength likewiſe improves daily, and the natural ſecretions and regularity of the body in point of evacuations are reſtored.

So rapid a progreſs in amendment is apt to encourage thoſe who experience it (who are often of a ſanguine temperament of mind as well as body) to treſpaſs in ſome meaſure in point of regularity with reſpect to regimen of life. But experience has proved the neceſſity of great caution reſpecting ſuch articles; and ſhewn that, however the ſymptoms of returning health may, and indeed ought to encourage hopes of a complete recovery, yet notwithſtanding, ſuch a ſtate is liable to be eaſily diſordered a ſecond time, and all the flattering expectations it ſuggeſted diſappointed by ſuch imprudence.

The

The ſtage of the diſorder moſt proper for a trial of the Bath waters, has been ſettled by long experience, (a foundation not now to be ſhaken) to be that in which the inflammatory ſymptoms, if any have preceded, have in a good meaſure abated, and a degree of weakneſs and want of tone in the ſyſtem begins to take place. Whilſt the fever prevails, the waters are improper, and likely to increaſe the diſorder, by exciting the nerves and circulatory veſſels into too violent action; and, by ſuch overſtrained exertion, laying the foundation in future for greater debility than might otherwiſe have accrued. When the fever, however, has ſubſided, it is found of the moſt important conſequences to health that the ſtrength ſhould be recruited as ſoon as poſſible; otherwiſe the fit is apt to return again ſoon in an imperfect and irregular form, and tedious in its duration. At this period the Bath waters are ſingularly uſeful in accelerating the recovery, and enabling the patient to reſiſt the

Stage of the diſorder moſt proper for trial of the Bath waters.

the access of a crude and indecisive paroxysm. Care, however, must be taken, not to precipitate the use of this remedy, by taking it before the pulse and other symptoms evince that a tendency to fever is no longer to be apprehended.

The Bath waters have also been esteemed for producing gout in persons afflicted with many anomalous symptoms of disorder which have been ascribed to irregular gout, though no symptoms of that disorder, distinguished by its proper characteristicks, have appeared. It sometimes indeed happens, that the Bath waters will in such cases produce a gouty paroxysm, and thus afford great relief to the other more troublesome though less painful symptoms. But it is very common for the gout to be supposed, when the nature of the complaint is totally different. A kind of prejudice has prevailed with many, and among them several professional persons of eminence, in favour of the opinion that a large pro-

portion

portion of the complaints that afflict mankind are to be referred to the claſs of gout. This fanciful theory has, I am apt to think, been injurious to the ſucceſs of medicine, by prompting the uſe of remedies which were imagined to have a reference to a ſuppoſed diſorder, whilſt thoſe which were adapted to the more obvious indications were overlooked.

The mode of uſing the Bath waters internally in the gout, does not materially differ from that practiſed in other complaints. Common prudence dictates, that in delicate caſes much caution ſhould be uſed not to overload the ſtomach, and create a diſguſt to the remedy at the commencement of the trial. A ſmall glaſs, of a quarter or one third of a pint contents, may be tried before breakfaſt at the firſt time of taking; and if this quantity feel eaſy, light, and pleaſant to the ſtomach; if the mouth continue moiſt, and the taſte of the water is grateful to the palate; and particularly if it paſs off freely by urine,

urine, another glaſs of the ſame ſize may be taken the ſame day about noon. If the ſame circumſtances take place at the ſecond time of drinking, the quantity may be gradually enlarged, and two ſmall glaſſes be taken before breakfaſt, and one at noon as before. If the waters continue to agree, ſome of their good effects will be quickly ſhewn by the increaſe of the appetite. This, however, requires ſome caution in its indulgence. It is obvious that it would be very improper to return again to the uſe of ſuch highly ſtimulating articles as contributed originally to produce the diſeaſe; but a farther caution is often neceſſary, to be moderate even in ſuch as are moſt unexceptionable. The appetite is ſometimes increaſed, before the powers of digeſtion are ſtrengthened in an adequate proportion. Thoſe, therefore, who uſe the waters, ſhould have a regard to this circumſtance, concerning which no determinate rule can be laid down.

It is worth remarking, that the firſt ſymptoms of amendment of appetite appear in the deſire for food at breakfaſt. Whether this be owing to the principal part of the water that is drank being taken juſt previous to that meal, I cannot ſay; but it ſuggeſts a neceſſary caution relative to the nature of the food taken at that time. New bread, often taken hot from the oven, and plentifully buttered, or rich cakes dreſſed in the ſame manner, are from their palatable qualities frequently brought up at this meal. Theſe, however, are cloying and difficult of digeſtion, even to the moſt healthy, and ſtill leſs ſuited to encourage the dawnings of appetite; ſtale bread, or biſcuit, either toaſted or cold, with a moderate proportion of cold butter, is much more proper. In ſome caſes a few thin ſlices of ſome ſalted meat eaten with bread and butter, form a morning meal agreeable to the taſte, and eaſy of digeſtion.

It is neceſſary to caution ſuch perſons againſt indulging their appetite for the Bath waters, as well as for other articles. I have often ſeen thoſe who are in a courſe of drinking them, and who are particularly ſenſible of their efficacy, expreſs the greateſt deſire for them, and wiſh to indulge in the quantity. This, however, muſt by no means be allowed. The appetite for theſe, as well as for other pleaſures, is ſucceſsfully gratified only by their moderate uſe.

To take them too freely would, independent of other hazards, only produce ſatiety and diſguſt. I have never found from my own obſervation, that more than a pint and a half of the waters taken daily in three equal portions, was of real ſervice; and in general a pint, taken in the ſame manner, is ſufficient.

It ſometimes happens, with delicate ſubjects, that the addition of ſome aromatick ſubſtance is uſeful in accommodating

dating the taſte of the water to the palate and ſtomach. The tincture of cardamoms, I have before obſerved, to have been uſed for a ſimilar purpoſe; and the acid and ſweet elixirs of vitriol, of the former London Pharmacopœia, were ſtill more effectual in caſes where flatulence was a troubleſome ſymptom. Probably the *ſpiritus ætheris vitriolici compoſitus* of the preſent Pharmacopœia might anſwer equally well.

It ſometimes happens, that the tone of the inteſtines is ſo weakened, and their ſenſibility increaſed by repeated gouty attacks, as to be liable to great laxity; and the Bath waters in ſuch caſes may, from their bulk and quantity when drank, excite this diſcharge. This, however, unleſs very moderate indeed, muſt by all means be repreſſed; as nothing is more injurious to weak gouty perſons, than an increaſe of this evacuation. To obviate this inconvenience, the waters muſt be taken in ſmall and divided doſes,

with

with a ſmall quantity (thirty or forty drops for inſtance) of the *tinctura opii camphorata* (lately called elixir paregoricum) in each glaſs. It however more frequently happens, that the ſtate of the body during the uſe of the waters tends rather to a coſtive habit than the contrary. This, though leſs prejudicial than the other extreme, is neceſſary to be remedied; and in general a few grains of the *pulv. aloeticus cum guiaco*, or of the *pilula ex aloë cum myrrhâ*, taken occaſionally, will greatly relieve this ſymptom.

I have before obſerved, that a repetition of former irregularities in regimen of life will ſoon deſtroy all the good effects of the Bath waters. This caution is particularly neceſſary to be attended to during the uſe of the waters, and regards not only food, and the uſe of ſtrong liquors, (thoſe of the ſpirituous kind eſpecially) but exerciſe alſo, and the going to reſt, and riſing, at the *natural*, but as they are now thought *early* hours.

The

The proper time for the drinking of the waters to be continued, is always a ſubject of attention, and ſometimes of delicacy. In general, about three weeks is a proper time for the uninterrupted continuance of their uſe, after which a week or ten days interval will be proper, and they may then be again commenced, and continued for a like time as at firſt. In delicate circumſtances it may be proper to begin with the water of the Croſs-Bath, but if this be not the caſe, ſuch caution is unneceſſary. In coſtive habits, the water of the Hot-Bath is preferred, but I doubt if this preference be upon a ſufficient foundation.

I cannot forbear in this place cautioning thoſe whoſe health does not require the uſe of the Bath waters, to avoid meddling with them, eſpecially if ſuch perſons be of groſs and plethorick habits of body. Strength of conſtitution, and an athletick habit, only render the uſe of ſtimulant ſubſtances, (eſpecially ſuch

whoſe tendency is particularly to excite the circulation, and cauſe a ſtronger action of the vital powers) the more dangerous, as they coincide with that diſpoſition which perhaps may already preponderate but too ſtrongly.*

Apoplexy, and its uſual conſequences, have not unfrequently followed ſuch injudicious trials. I ſaw an inſtance of this in a perſon in high office, and of great abilities, a man of a robuſt habit and great bodily ſtrength, who about ſeventeen years ago fell a victim to this unadviſed drinking the Bath waters. When he came to this place he had no complaint of any kind, and although he drank the waters pretty largely, it was with no ſpecifick medicinal intention. Their effect was, to render the body coſ-

* It is well obſerved by HIPPOCRATES, that exceſs of health and ſtrength borders upon diſeaſe; which both he and GALEN inſtance very properly in the athletæ. See the firſt book of the Aphoriſms of Hippocrates, Aphoriſm III. with Galen's Comment thereupon.

tive,

tive, to produce a pain of the head, and to increaſe the appetite. Theſe circumſtances being diſregarded, a few days afterwards, whilſt he was perſiſting in the uſe of the waters, he was ſeized ſuddenly in the publick rooms with an apoplectick fit, and expired in about twelve hours from the firſt attack, though aſſiſtance was immediately called, and due evacuations procured as ſoon as poſſible.

External uſe of the Bath waters in the gout.

The uſe of the waters externally has long been recommended in gouty caſes, thoſe particularly where the limbs are affected with ſtiffneſs and permanent ſwellings, not of the inflammatory kind. Theſe are very frequent in caſes where the conſtitution is weak, and the habit leucophlegmatick; ſigns of the diſorder appear, ſufficient to aſcertain the exiſtence of ſuch a tendency in the ſyſtem, but the powers of life are not active enough to cauſe it to ſhew itſelf in its proper inflammatory form.

Hence the diſorder ſeems to have no proper criſis, but to continue often for a long time, at nearly the ſame ſtage and degree. The parts remain ſwelled, and are at times painful; but ſuch ſeeming efforts of nature are not of ſufficient continuance to give a regular termination to the complaint. Hence the joints, by long continuance in the ſame poſture, are apt to become rigid; and the ſame cauſe, joined to a ſedentary life, and the weakening effects of local diſeaſe, cauſe the parts to become oedematous.

In ſuch caſes the bath is ſingularly uſeful, by exciting the circulation, and ſtimulating the nervous ſyſtem into action and exertion. Sometimes it will produce a regular fit, but I think it more commonly acts by carrying off the ſymptoms that remain, by mild and gentle perſpiration, and by moderately ſtimulating the parts to abſorb the ſtagnated lymphatick fluids. This kind of gout approaches nearly to that deſcribed by MUSGRAVE, under the name of *Arthritis*

ex Chloroſi, or *Arthritis alba*. It is found, however, in both ſexes, and reſembles in its general character the irregular gout firſt deſcribed. When found at an early age in the female ſex, it is generally among thoſe who have an hereditary claim to the diſeaſe, and who labour under a ſuppreſſion of the menſtrual diſcharge; which circumſtance ſeems to accelerate the premature appearance of the gout. The Bath waters in this mode of application are not only ſuited to the relief of the original diſorder, but alſo are adapted particularly to the circumſtance, by which we have reaſon to think it aggravated, if not produced.

The Bath waters, though improper to be uſed externally during the inflammatory ſtage of the regular gout, are often of great ſervice during the intervals, in preventing the rigidity of the muſcles, and that tendency to anchyloſis in the joints which are ſo ſubject to come on after a violent and painful gouty paroxyſm. It was obſerved many years ago

by SYDENHAM,* that violent attempts to excite perſpiration, however they might ſucceed in accompliſhing that end, had a bad effect in fixing the gout too ſtrongly upon the part affected; and later experience has ſhewn, that when a profuſe perſpiration of the part has been produced, and continued ſome time by artificial means, (as by oil-caſe coverings, and the like) that the articulations are ſubject to become rigid, and to be confined in their power of motion, and often diſcover a crackling noiſe upon being ſtirred; which is undoubtedly owing to the defect of ſynovia, which appears to be exhauſted, or its generation obſtructed by the exceſs of the local diſcharge.

The cautious uſe of the Bath waters externally produces, however, very different effects. From the above-mentioned applications the perſpiration the former

* Tract. de Podagra, p. 450.

excite,

excite, reſembles the natural breathing ſweat* which is the proper termination of a gouty paroxyſm, and the fluid which is probably abſorbed ſerves to dilute the ſecretions, and to ſupply the defect of moiſture; not to exhauſt it like dry artificial heat, and the other applications before mentioned. Hence we almoſt daily find that gouty limbs (provided no actual anchyloſis be formed) ſoon recover their flexibility, and the proper moiſture and free uſe of the joint, by bathing and pumping the parts, provided that this remedy be tried in a ſhort time after the inflammation be gone off, and before the parts lately inflamed ſhall have time to form any permanent coheſion, and the muſcles have not acquired any conſiderable rigidity, by being long retained in the ſame ſituation.

Muſcular contractions do not become irremediable in ſo ſhort a time as an ad-

* SYDENHAM, page above cited.

heſion

heſion of the bony parts is ſometimes formed; but ſtill, if neglected, the muſcles will in time become tendinous, and loſe their power of contraction and extenſion, and of courſe the joint will become immoveable. The immediate effect of the warm bath on muſcular contractions not of too long ſtanding, is truly wonderful. Though the limb be apparently ſtiff and inflexible, the body is no ſooner immerſed in the water, than the former becomes ſupple and obedient to the will, and continues ſo during the patient's ſtay in the bath. Upon coming out again, the ſtiffneſs returns, but a frequent repetition of the bath renders the limb gradually moveable, and at laſt reſtores its uſe altogether. This, however, muſt be underſtood to comprehend ſuch caſes only wherein the ſtructure of the muſcle itſelf was not altered, or had acquired that degree of almoſt bony hardneſs, which by long continuance in a ſtate of inactivity it is apt to do. In caſes indeed of no very long ſtanding,

we

we ſhould not be diſcouraged from a trial of the Bath waters, notwithſtanding a great degree of hardneſs of the muſcles and ſtiffneſs of the joint has taken place. I have ſeen the *biceps* muſcle* of the thigh, and the *ſemimembranoſus* and *ſemitendinoſus* in a ſtate that to external examination would have ſeemed too hard and rigid to have admitted any change, relaxed entirely, and rendered pliable by the uſe of the waters continued for a long time.

If the ſtiffneſs pervade many of the joints, (as of the arms and fingers, as well as thoſe of the lower extremities) it is uſual to adviſe bathing, by which the water is applied to the whole body at once without the trouble of a ſpecifick application to each part; but where any particular limb or joint is affected, either ſeparately, or in a much ſuperior degree

* Theſe three muſcles form the external and internal hamſtring.

to

to the others, it is common to recommend the uſe of the pump. This may be, and often is uſed during the time of bathing; when, if the pipe be brought below the ſurface of the water of the bath, the impulſe of the ſtream is much leſs ſtrong than if uſed without ſuch intermedium. This method ſerves very well where the parts are anywiſe tender, or where the patient has not been accuſtomed to the operation.

The other method, which is here called by the quaint phraſe of *dry pumping*, is the application of the water by a pump to any particular limb or part of the body, independent of the reſt. This has ſome advantages, as the water may be applied in a more powerful form than that of a ſimple warm bath; and the fatigue is at the ſame time diminiſhed, and the patient leſs ſubject to faintneſs than when the whole body is immerſed. No time for ſtay in the bath can be ſpecified; from five minutes to half an hour

hour is the uſual allotment. When the pump is uſed, it is moſtly directed from twenty to two hundred ſtrokes at a time. Twice, or at moſt thrice a week, is ſufficient for bathing, but the dry pump may be uſed daily.

The uſe of the bath or pump (the latter eſpecially) may be continued for a longer time than the drinking the waters. It does not appear that any interruption of the external uſe of the Bath waters is neceſſary, in order to ſecure their good effects. They are often tried for two, three, four, or five months ſucceſſively, with a gradual improvement during the whole of the time. When uſed, however, as baths for ſo long a period, it is adviſeable that a moderate temperature (as of 90 or 92 degrees) and a ſhort ſtay be employed, leſt the diſcharge by perſpiration ſhould be too weakening. Leſs caution is requiſite relative to the pump, as being a partial application only.

It

It is alſo found that the bath may be made uſe of with advantage when the waters prove too ſtimulant for internal uſe. This is particularly exemplified in the gout, eſpecially in young ſubjects. The greateſt caution is however in ſuch caſes neceſſary, to uſe ſuch a degree of heat only, as may prove ſoothing to the feelings, without exciting the circulation to a feveriſh point; about 88 or 90 degrees is proper to be tried at firſt, and ſhould not be increaſed to more than 92 or 94. When thus cautiouſly tried, I know by experience that the bath may be continued, even in delicate circumſtances, a long time with great advantage. A temperate ſeaſon beſt ſuits the external uſe of the Bath waters. Cold is in every reſpect adverſe to their efficacy; and great heat is apt to encourage profuſe perſpiration. A warm, rather than a cool ſeaſon, is, however, to be preferred.

It is proper that the body ſhould be cooled gradually after bathing, and on that

that account, it may be proper to go to bed for a ſhort time afterwards, if the patient bathes early in the morning; but any extraordinary heat (either by warming the bed, or of the chamber, or of the quantity of clothes, or by warm liquors) are improper. If the patient bathes at noon, or in the evening, no other caution will be neceſſary, than ſuch as will gradually bring the body to its uſual temperature. With regard to regimen, the one recommended when the waters were taken internally in the gout, is at leaſt equally proper here. The good effects of the waters ſeem to be owing more to their action on the nerves, and to the pleaſing and agreeable ſenſations which they induce, (which tend to compoſe and allay the irritability of the ſyſtem at large) than to any particular evacuation which they produce.

Uſe of the Bath waters in rheumatiſm.

The rheumatiſm is a complaint nearly allied to the gout, and, like that, capable in moſt inſtances of relief from the uſe of

of the Bath waters. This diſeaſe is divided into that wherein the inflammatory diſpoſition prevails, (and which is generally attended with ſymptoms of fever, and very acute pain) and that wherein the pain is leſs violent, but more laſting, and where no ſigns of fever or external inflammation appear.

It was formerly thought, that the Bath waters were of no ſervice, and even detrimental, in the kind of rheumatiſm firſt mentioned; and it muſt be owned, that the waters are certainly improper to be drank during the feveriſh ſtage, and that the native heat of the ſprings (even the cooleſt of them) is too great for external uſe in ſuch a ſtate of the diſeaſe. But ſince the opinions firſt alluded to were formed, many alterations in the ſtructure of the baths have taken place, by which the heat may now be accommodated both with ſpeed and preciſion to any degree that may be required; and it is found in conſequence thereof, that the

of the acute kind.

Bath

Bath waters may be uſed in every caſe, where the Buxton waters are proper, with at leaſt equal advantage, and in many circumſtances (ſuch as privacy and change of water of the bath for each perſon that bathes) with much ſuperior conveniences.

It is indeed, I believe, adviſeable that the feveriſh diſpoſition ſhould be abated by bleeding and other evacuations, previous to the trial of any bath whatſoever; but after theſe have been uſed, and the heat of the body, thirſt, and head-ache, (if any ſuch be preſent) are abated, the temperate bath is often productive of the happieſt conſequences; and I know by experience, that it has been tried with ſafety and avantage, even when the previous evacuations had not been effectual to lower the pulſe, or to abate the pain. I muſt not, however, be underſtood to mean that it may be uſed before evacuations have been made, provided the fever runs high. I have generally adviſed from

from 86 to 90 degrees in ſuch circumſtances, but this may be varied at the diſcretion of the phyſician.

I have generally obſerved patients at their firſt going in complain of cold, when the water did not exceed the heat ſpecified above, and were deſirous to have the heat raiſed. I have, however, cautioned againſt ſuch change, and generally found that the temperature grew more agreeable after a few minutes' ſtay, and that the patients came out cooler, and eaſier in their limbs and pained parts, than when they went in; whereas, when the heat has been raiſed to 94 or 96 degrees whilſt the patients remained in the bath, I have moſtly obſerved them to come out fluſhed, with little abatement of the pain, and often with an increaſe of fever.

As the bath here is uſed as a ſoothing application, and to relieve pain, and as no evacuation that would be likely to diminiſh the ſtrength is intended to be promoted

promoted by it, it may (if the painful ſymptoms are urgent) be uſed daily, with a ſtay of from about ten minutes to half an hour each time. The pleaſure and eaſe which the patients generally experience, renders them ſufficiently punctual in the application of the remedy. Care muſt however be taken, that the time of ſtay be prolonged gradually, and in no caſe exceed thirty minutes. The time of day may be ſuited to convenience, and other circumſtances regarding the diſorder. It certainly would be proper to employ it at ſuch an hour as the ſymptoms were leaſt violent, if ſuch a one could be diſcovered.

The time the remedy ſhould be continued, muſt depend entirely on the duration of the diſeaſe. There ſeems to be no reaſon for perſiſting in it after the ſymptoms have ceaſed. Whilſt any fever remains, the drinking the water had better be forborn.

In the chronick rheumatiſm.

The chronick rheumatiſm is more adapted to the uſe of the Bath waters than the acute kind. The former of theſe is that which moſt frequently occurs, and is generally known by the name of the Common Rheumatiſm. It moſtly attacks people in advanced age, or paſt the prime of life, is ſeldom attended with fever, and the pain is more wandering and leſs acute, though more laſting, than in the inflammatory kind. It is alſo leſs apt to be attended with ſwellings or ſoreneſs of the parts affected.

The Bath waters, both internally and externally taken, are perfectly well ſuited to this complaint. The drinking of the waters, by keeping the ſecretions regular, and ſupporting the ſtrength, digeſtion, and appetite, is of ſervice; and the warm bath is ſtill more peculiarly ſuited to the nature of this diſorder, and is indeed by much the moſt efficacious remedy. It may be uſed for this purpoſe with conſiderable freedom, as four or five times a week,

week, and with a ſtay of twenty or thirty minutes each time, if the health be in other reſpects good, and the ſtrength of the conſtitution unimpaired. A greater latitude may alſo be allowed in reſpect to the heat of the water. That of the Croſs-Bath or Queen's-Bath, (which are about 94 degrees of heat) is well ſuited to ſuch caſes. No artificial heat, (as of fires in the chamber, warming of beds, or weight of cloaths, beyond what is neceſſary to preſerve a moderate temperature) is of any ſervice. It is generally obſerved, that ſuch rheumatick caſes as have the pain alleviated by the moderate warmth of a bed, are more likely to receive benefit by the Bath waters, and will admit of a greater degree of heat of the bath, than ſuch as have the pain aggravated thereby. This rule, however, is leſs general than it was when baths of a moderate temperature were not ſo frequently employed as they are at preſent.

Pumping on the limbs, ſtiffened with repeated attacks of this diſorder, and where the joints are ſwelled, is of great ſervice. This, however, muſt not be uſed whilſt any conſiderable ſigns of inflammation, or great acuteneſs of pain, remain. In ſuch caſes it is prudent to try a quiet immerſion of the pained part in the Bath water for a few times before the uſe of the pump be commenced. The pump may be uſed from thirty to two hundred ſtrokes every day, and continued (if it ſucceeds in eaſing the pain) for any time that may be required.

In the ſpace of five years (to wit, from the beginning of the year 1775, to the end of the year 1779) three hundred and ſixty-two patients were admitted for this diſorder into the Bath hoſpital, of whom one hundred and twenty-ſeven were *cured*,* one hundred and forty-four were

* Thoſe who were judged from the preſence of other diſorders, improper for a trial of the Bath waters, are not here included.

much

much better, forty-two were *better*, forty-one were *no better*, and eight *died*, four of whom died of the ſmall-pox.

The proportion of the number benefited, to the whole number received into the hoſpital for this complaint, is as 313 to 362, or nearly as 1. to 1.156. The proportion of thoſe benefited to thoſe that received no benefit, is as 6.3877 to 1.

Uſe of the Bath waters in Hip caſes.

Iſchiadick complaints, commonly called hip caſes, are often benefited by the Bath waters. This complaint is well known to be a fixed pain of the chronical kind, ſeated in the hip, and generally rather behind the larger eminence of the thigh-bone that projects externally, commonly called the greater *trochanter*, and extending from thence obliquely upwards to the *os ſacrum*, and ſometimes downwards on the outſide of the thigh to the ham and leg, even to the foot, and moſtly following the courſe of the

the expanſion of the *faſcia lata*. Sometimes (though I believe leſs frequently) the ſeat of the pain is in the groin, and is propagated from thence downwards along the inſide of the thigh to the calf of the leg.

The leg of the ſide affected is ſometimes rather ſhorter than the other,* but more commonly longer; and the muſcles near the ſeat of the pain (the *glutæi* eſpecially) appear generally more round and prominent, and extend lower downwards than in a natural ſtate, though often without any particular ſwelling.

This complaint ariſes from various cauſes; the moſt common of which are gout, rheumatiſm, and external violence, as a blow, a fall, &c. If the Bath waters be applied to before any abſceſs is

* I have been informed by a gentleman of this place, of great eminence in the profeſſion of ſurgery, that he has generally found the leg of the ſide affected at firſt longer, and afterwards to become ſhorter than the other.

formed,

formed, and before the coming on of any hectick ſymptoms, they are commonly ſucceſsful. Much caution is, however, neceſſary in the application. If the ſymptoms be at all violent, it is uſual to begin with a bath of moderate temperature, as of 92 or 94 degrees; the laſt of which is nearly that of the Croſs-Bath. After the trial of this for a few times, provided no additional heat or fever be excited, but the pain rather abates, the uſe of the pump is added to that of the bath. This being uſed while the patient is in the bath, communicates very little additional ſtimulus, as the force with which it ſtrikes the part is very moderate, and the heat diminiſhed by being mixed as it iſſues from the pipe with the water of the bath, which is conſiderably cooler.

If the pain be very violent, and the pulſe conſiderably accelerated, it is proper to premiſe ſome general evacuations before the uſe of the waters is commenced;

ced; as by bleeding, purging moderately, and the uſe of antimonial medicines. The application of cupping-glaſſes to the part, where their ſuction can be borne, is often of ſervice; or where the part is very tender, a large number of leeches (as of ten or more at a time) may be put on with advantage.

If theſe means ſucceed in bringing the pulſe nearly to its natural ſtandard, it is a favourable ſign, and indicates that there is a probability of relief from the Bath waters, although the pain ſhould not be proportionably abated. To the relief of this ſymptom Dover's Powder has been often found effectual, both as a ſedative, and in conſequence of the perſpiration it generally excites.

It, however, but too often happens, that the ſeaſon of trial of the Bath waters is ſuffered to elapſe, and that when the patients are ſent hither for that purpoſe, matter (or at leaſt a collection of fluid)

is

is formed in the part, and a hectick fever accompanying. In theſe circumſtances, the Bath waters, ſo far from being ſerviceable, only haſten death, by aggravating the fever.

Every caſe indeed, wherein a fluid is collected in the part affected, is not equally deſperate. It ſometimes happens in violent rheumatiſms, that a fluid is effuſed, which ſeems to be contained under the ſheaths of the muſcles, and is of a gelatinous nature, and capable of being abſorbed. In ſuch caſes the uſe of bliſters cautiouſly applied near the part, and of ſome moderately ſtimulant application, ſuch as the lime poultice,* may contribute to this purpoſe, and prepare the way for the uſe of the waters. Every

* The lime poultice is made of *one part* quick-lime that has been expoſed to the air for ſome weeks, and fallen to powder, and *two parts* of oatmeal made into a poultice with hog's lard. This is ſpread half an inch or more thick upon a cloth, and applied warm to the part, and renewed every twenty-four hours, and is often continued for a month or longer.

caſe,

caſe, however, wherein a fluid can be clearly diſcerned to be collected, muſt be acknowledged to be precarious in the event, though ſometimes ſucceſsful.

The number of hip caſes received into the Bath hoſpital from the beginning of the year 1778 to the end of the year 1784, is one hundred and ſixty-ſeven; of whom thirty-one were *cured*, ſixty-ſix *much better*, thirty *better*, forty *no better*, and none *dead*. Thoſe deemed improper for a trial of the waters are not here included. I did not ſet down the number, but believe there were about fifteen of ſuch caſes. The proportion of thoſe benefited, to thoſe that received no benefit, is as 3.175 to 1.

In white ſwellings of the knee.

White ſwellings of the joints, the knee particularly, are ſomewhat ſimilar in their nature to hip caſes, and, like them, are ſometimes relieved by the external uſe of the Bath waters. The ſame cautions, and the ſame applications, (particularly the lime

lime poultice) are neceſſary as in hip caſes; and eſpecial care ſhould be had to make a trial of ſuch remedies as are approved of, whilſt the diſeaſe is in its early ſtage. Could we ſee them at the Bath Hoſpital at that period, it is probable the proportion of caſes *conſiderably* benefited, would be greater than they appear in the liſt given beneath; which includes the ſame ſpace of time as was mentioned when I ſpoke of hip caſes.—*Cured*, one; *much better*, four; *better*, five; *no better*, two. In all, twelve.---- The proportion of thoſe who were benefited, to thoſe who were not, is as *five* to *one*.

Uſe of the Bath waters in weakneſs of the organs of digeſtion

Complaints ariſing from the weakneſs of the organs of digeſtion, are often much relieved by the Bath waters. Theſe diſorders are connected with various cauſes, and it is in a good meaſure from a conſideration of theſe, that our judgment concerning the probability of the ſucceſs of the waters muſt be formed.

Exceſs

Exceſs in ſtrong liquors is a common cauſe of weakneſs of the functions of the ſtomach. Want of appetite is generally in ſuch caſes the leading ſymptom. With this are frequently joined coſtiveneſs, nauſea, (eſpecially in the morning) which is ſometimes attended with vomiting, a ſenſation of inflation, together with coldneſs and inſenſibility of the ſtomach, heart-burn, flatulent eructations, and ſometimes conſiderable pain in that organ. Theſe ſymptoms are more ſevere when ſpirituous liquors have been indulged in, than when ſimple fermented liquors have been uſed.

In ſuch caſes, the uſe of the waters internally is often of great ſervice, provided the ſymptoms be not too far advanced, and the patient will conſent to a reform in his regimen of life.

Caution is however neceſſary in the adminiſtration of the remedy. It ſometimes happens, that the immoderate uſe

of

of ſpirituous or fermented liquors, inſtead of producing an inſenſibility of the ſtomach to ſtimulant ſubſtances, (which is their general effect) will bring on a great degree of morbid irritability, though without any tendency to fever. This generally takes place in young people who have imprudently given way to ſuch irregularities. In ſuch caſes the internal uſe of the waters may more properly be forborn for a time, and the external uſe of them at a temperate degree of heat (92 degrees for inſtance) made trial of, in a cautious manner. This often relieves the nervous irritability very much, and prepares the patient for the internal uſe of the waters, which muſt be very gradually adminiſtered, in conjunction with the bath. The latter of theſe I have often found of more importance than it is uſually apprehended to be in ſuch caſes, and am ſatisfied it is at leaſt as generally uſeful and more ſafe than the waters internally taken.

If

If the ſtomach be in a cold and inſenſible ſtate, loaded with mucus, and ſlow in digeſting food, an emetick will be neceſſary to rouſe it into action, and to diſcharge its accumulated contents. An ounce and half or two ounces of the wine of ipecacuanha, and two grains of the *antimonium tartariſatum*, is a powerful, but not too ſtrong a doſe on ſuch an occaſion for an adult perſon, not greatly weakened by the diſorder; and is the beſt preparation for the waters, which ſhould be entered upon as ſoon as poſſible afterwards, whilſt the effects of the emetick may be ſuppoſed to continue.

Such a remedy, however, though ſafe and beneficial in cautious hands, muſt not be indiſcriminately ventured on, or often repeated. When the irritability of the ſyſtem is preternaturally increaſed, emeticks are often fatiguing, and diſtreſsful in their operation, and ſerve ſometimes to aggravate thoſe ſymptoms we would wiſh to abate; and even in habits where

where their uſe is leſs exceptionable, we muſt be careful leſt by their too frequent exhibition we produce a habit of taking them;—a cuſtom which it is difficult to lay aſide, and highly injurious to health to perſevere in.

The ſtate of the bowels is likewiſe neceſſary to be attended to. Coſtiveneſs is generally a ſymptom complained of, ſometimes with, and at others without cauſe. A few grains (three or four for inſtance) of the *pilulæ ex aloë* may be taken at night, and occaſionally repeated when there is any real coſtiveneſs. But the patient ſhould conſider that purging is by no means to be conſidered as an operation that leads to the cure of the diſorder, and that every degree of it beyond promoting ſuch a degree of evacuation as is natural, tends to weaken, and of courſe to injure the patient.——This caution I thought neceſſary to inſert, as it is a common miſtake with perſons labouring under theſe complaints, to fancy that

that a lax ſtate of the bowels is favourable to their health, and of courſe to be frequently taking medicines of ſuch a tendency;—a habit productive of numerous bad conſequences, and particularly counteracting the effects of the Bath waters.

A contrary habit ſometimes takes place, eſpecially in caſes of increaſed irritability. This muſt by all means be reſtrained within moderate bounds; and I have generally found a ſtrong infuſion of cinnamon with a ſmall quantity of the *tinctura opii camphorata*, frequently adminiſtered, ſerviceable to this end. The warm bath tried cautiouſly, often produces in ſuch caſes the beſt effects.

It is not uncommon to ſee caſes wherein an obſtinate coſtiveneſs, or rather conſtipation of the bowels, will continue ſeveral days, and be ſucceeded by a violent diarrhœa; and theſe oppoſite habits to ſucceed one another alternately for a conſiderable length of time.

In

In ſuch caſes it is neceſſary to be very attentive, to prevent the coſtiveneſs, which lays the foundation of the violent diſcharge; and with this precaution, I have ſeen the Bath waters uſed both internally and externally with the greateſt advantage.

In the hyſterick colick.

The Bath waters have been found highly uſeful in that ſpecies of colick called by SYDENHAM the Hyſterick Colick, which is ſubject to return at intervals nearly periodical, and is accompanied with other ſymptoms of the hyſterical kind.

In the colick of Poictiers.

The Bath waters are alſo ſaid to have been of the greateſt ſervice during the painful paroxyſm of the Colick of Poictiers.* I do not in the leaſt doubt the truth of theſe accounts, which are given from the beſt authority, and are more-

* See Dr. WARREN's Paper on the Colica Pictonum. Medical Tranſactions, Vol. II. p. 81—89.

over perfectly conſonant with the known effects of the Bath waters; but have not had much opportunity of obſerving them myſelf, the diſeaſe not being very common among the inhabitants of this place, and the ſubjects brought to the hoſpital from a diſtance having gone through the painful ſtage before they come thither.

In jaundice from biliary calculi.

The jaundice, when ariſing from ſimple obſtruction of the biliary ducts, from calculous concretions, has been long obſerved to be relieved by theſe waters. We cannot indeed conceive how the Bath waters, (or indeed any other remedy) can diſſolve the biliary calculi when formed; but that the Bath waters, by obviating ſome of the ſymptoms that bile thrown into the circulation is apt to produce, may be of great ſervice, experience fully ſhews.

The ſtimulant qualities of the waters ſeem here to be highly uſeful, in counteracting that languor and inertia which almoſt

almoſt conſtantly attend jaundice, and of courſe exciting the natural efforts to expel the cauſe of the diſeaſe. It is accordingly obſerved, that biliary calculi are often voided during a courſe of the Bath waters. Their diuretick qualities are moreover ſerviceable in carrying off the bile from the circulation.

The ſtimulant qualities of the Bath waters ſeem to have been the foundation of their good effects in the diſorders hitherto treated of. I do not, however, mean to repreſent the foregoing diviſion as an accurate arrangement; nor is it of much conſequence, as I ſhall not attempt to draw any practical inferences from thence, independent of actual experience, and only uſe it in this place for the purpoſe of preſerving ſome degree of order in treating the ſubject.

Antiſpaſmodick qualities of the waters.

On this plan the antiſpaſmodick qualities of the Bath waters are next to be conſidered.——When the Bath waters

are recommended with this intention, it is neceſſary to have regard to the ſtimulating qualities they poſſeſs; which always partake in ſome meaſure of an inflammatory nature. Hence they are moſt ſerviceable in ſuch caſes wherein the ſenſibility of the ſyſtem may be excited with advantage, as in hypochondriacal conſtitutions, where the circulation is languid, and a tendency to inertia prevails. In ſuch caſes the Bath waters both externally and internally uſed, have been often of great ſervice, eſpecially when ſuch diſorder has been combined with weakneſs of the functions of the ſtomach and alimentary canal. Exerciſe, however, principally on horſeback, is abſolutely neceſſary to be joined with their uſe, not only on account of the direct effects of motion and freſh air on the health and ſpirits, which every one knows to be conſiderable, but equally on account of its relaxing the mind, by abſtracting the attention from being fixed on the diſorder, a circumſtance that conſtitutes the principal

Uſe of the Bath waters in hypochondriaſis.

principal and diſtinguiſhing mark of this complaint.

I believe that of late years the internal uſe of the waters has been moſt commonly adviſed in ſuch caſes. But it appears from the accounts of former periods, that the waters were remarkable for their good effects in this diſeaſe at a time when they were ſcarcely drank by any, and muſt of courſe have produced their effects ſolely by their external application. Induced by this conſideration, joined with the teſtimonies of ARETÆUS* and HOFFMAN,† both of whom adviſe ſulphureous baths on ſuch occaſions, I have often recommended bathing, always with ſafety, and often with manifeſt advantage. I think I have obſerved, that a temperate bath‡ (as of

* ARET. curat. Melancholiæ.

† HOFFM. de Baln. Aq. Dulc. Uſu.

‡ This is agreeable to the advice of HOFFMAN:—— "Temperatiori reddito calore, major utilitas in hoc af- "fectu expectanda eſt."——*Hoffm. loco ſupra citato.*

about

about 92, or even 90 degrees) is preferable to one of a hotter kind.

In hyſterical complaints.

Hyſterical complaints are ſometimes relieved by the Bath waters, but I do not think them in general ſo well ſuited to ſuch a remedy as the former are. The general ſubjects of this diſeaſe are perſons at a rather early time of life, who have an increaſed ſenſibility, and often a conſiderable degree of plethora in the blood-veſſels. Caſes ſo circumſtanced are not adapted to the uſe of the waters, but when the diſorder has come on after any weakening evacuation, and is accompanied with impaired digeſtion and appetite, and obſtruction of the menſtrual diſcharge from the ſame cauſe, the waters are generally very ſerviceable. The ſame cautions reſpecting the temperature of the bath are neceſſary as in the former inſtance.*

That

* A caſe is related by Dr. HUXHAM, of a perſon of a ſpare habit of body, with much vivacity of temper and ſpirits, who by too much exerciſe, and the too frequent uſe of

That ſingular diſorder called St. Vitus' Dance, has been found to receive relief from the Bath waters. Out of eight caſes, according to Dr. CHARLTON's Account, which occurred from May 1751, to May 1764,† three were diſcharged *cured*, three left the houſe *much better*, and two received *no benefit*. A later account is, however, more favourable. It appears from the regiſter of the hoſpital, that out of nine patients admitted for this complaint, from the beginning of the year 1775, to the end of the year 1784, eight were *cured*, and one *better*. St. Vitus' dance.

In thoſe caſes that I have ſeen, bathing, and pumping the ſpine of the back moderately twice or three times a week,

of the cold bath, had exhauſted his ſtrength, and began to waſte in his fleſh, and to become low-ſpirited and weak in his mind as well as his body. The Doctor mentions, that by the uſe of a nouriſhing mild diet, and the uſe of the Bath waters, this patient ſoon recovered health, ſpirits, and fleſh. HUXHAM on Fevers, p. 30.

† CHARLTON's Enquiry, p. 53.

ſeemed

ſeemed to be the principal circumſtances that led towards a cure.

Painful menſtruation.

A ſpaſmodick affection of the uterus, often attended with great pain, ſometimes comes on in females periodically at the time of menſtruation. The diſcharge in ſuch caſes is generally too ſmall, and this circumſtance often produces nearly the ſame effects as obſtruction of that evacuation is obſerved to do. The warm bath, properly managed, has been repeatedly obſerved to produce the happieſt effects in ſuch caſes. It is uſeful to remark in this place, that ſterility in young married women ſeems to be owing frequently to this cauſe; and I have more than once ſeen the removal of the ſpaſmodick affection followed ſoon by an increaſe of family.

Diaphoretick qualities of the Bath waters.

The diaphoretick powers of the Bath waters are next a ſubject of conſideration. Under this head I mean to ſpeak of their efficacy in cutaneous diſeaſes, the leproſy

leproſy particularly, not that I am aſſured that their efficacy in the cure or abatement of this diſorder is owing to their increaſing the perſpiration, but only as it ſeems to be the moſt obvious and natural means by which we can ſuppoſe them to operate, and becauſe the general opinion of mankind favours this ſuppoſition.

Uſe of the Bath waters in the lepra.

The leproſy being a diſorder not very commonly known, I ſhall here give ſome account of it from actual experience, many caſes of this being conſtantly in the Bath hoſpital.

The appearance this diſeaſe puts on is that of blotches on the ſkin, which are of different ſizes, from that of a ſhilling to one conſiderably exceeding that of the hand. Theſe appear ſometimes on every part of the body, but are moſt commonly found on the legs, arms, and face. Theſe blotches are covered with a rough ſcaly eruption, which is at firſt red, and in its progreſs

progreſs becomes white, in parts at leaſt; though in ſome inſtances, it becomes white and ſcaly ſooner, and to a greater degree, than in others.

This eruption is in ſome nearly level with the ſkin, in others it is more prominent, even to nearly half an inch above the ſurface; which laſt circumſtance is more common after the eruptions have aſſumed a white ſcaly appearance, than whilſt they continue of a red colour.

The eruption is in general dry, but it is not uncommon for it to be moiſt and oozing a thin ſerous fluid. The parts affected are ſometimes rather ſwelled, but not to any conſiderable degree; nor is ſuch ſwelling at all œdematous. It is more common for the parts affected to be ſwelled when the eruption is moiſt and ſcaly than when otherwiſe.

The ſcaly kind is ſometimes very uneaſy, and even rather painful, but this ſeems

ſeems to ariſe principally, if not altogether, from the hardneſs and ſtiffneſs of the ſkin, which renders motion troubleſome. The ſame cauſe renders the ſkin inſenſible to ſlight impreſſions of the touch, but no real inſenſibility of the part affected, or thoſe adjacent to it, has been noticed. The breath has been remarked to be rather ſhort in ſome perſons advanced in years, and who were troubled with the moiſt kind; but I am not certain that this was produced by the diſeaſe.

The appetite, ſleep, and ſtrength, of ſuch patients appear to be ſcarcely affected,* and there is ſeldom any thirſt or fever, indeed I believe I may ſay none that could be imputed to this diſeaſe in any caſes that have fallen under my notice. The body is in general coſtive, but not to any great degree, and what yields eaſily to common remedies.

* Αισχος μαλλον η ναυσημα.

HIPPOC. de Affect. §. 5.

I have

I have never had an opportunity of ſeeing this diſeaſe at its firſt appearance, but have been informed by the patients that it conſtantly begins with a ſenſe of weight and oppreſſion at the ſtomach; which after continuing ſome days, is followed by ſickneſs and vomiting, and theſe relieve the former uneaſy ſenſations. This, however, is ſoon followed by an eruption, which appears in different parts of the body, and often on the head, in form of pimples, with white heads, which are attended with great itching. Theſe ſometimes ſpread, and diſcharge a thin corroſive humour; at others they riſe and incruſt the parts over with a rough ſcaly coat, not unlike the bark of a decayed tree.

The method in general purſued with ſuch patients is, to order them to bathe twice or thrice a week, and to ſtay about a quarter of an hour in the bath each time. This, however, muſt be regulated according to their age, ſtrength, and other

other circumſtances. Formerly the Hot Bath was, I believe, adviſed for ſuch patients; but I ſhould prefer a more temperate warmth in a complaint that required ſo long a continuance of the remedy. The uſe of the bath, after a few times trial, generally produces an abatement of the itching, and a deſquamation in ſome degree of the leprous cruſts, and of courſe renders the ſkin more ſoft and pliable. This courſe is uſually accompanied with the uſe of the waters internally in moderate quantities, as about a pint daily, which are thought to ſecond the good effects of the bath, by promoting a free and gentle perſpiration.

If by this method the ſcaly and rough parts fall off gradually, and are not ſucceeded by any freſh eruptions, if the itching abates, and the ſkin returns by degrees to its natural ſtate, no other medicines are given, ſave a gentle purgative occaſionally, ſhould the body be coſtive. If, however, the diſeaſe ſhews no ſigns of abatement

abatement after a trial of the waters for a few weeks, or that the leprous eruptions when removed in one part, break out in another, and a ſucceſſion of them is thus kept up, it is common to have recourſe to mercurial remedies, the more acrid preparations eſpecially, ſuch as the ſolution of corroſive ſublimate in ſmall quantities, which is thought to haſten the ſeparation of the leprous cruſts, and to procure an abatement of the other ſymptoms.

The external uſe of the Bath waters coincides very happily with the uſe of mercurials, as it aſſiſts their diaphoretick qualites, and obviates their tendency to produce a ſalivation. I think I have ſeen the common tar ointment of ſervice in ſoftening the ſtiffneſs of the ſkin, and promoting the ſeparation of the ſcaly eruptions.

The obſtinacy of the diſeaſe is by no means proportioned to the quantity of the

the eruption. I have often ſeen patients with the face and many parts of the body nearly covered with a white prominent ſcaly cruſt, that have been perfectly cleanſed in a few weeks; whilſt others, that had a few blotches only, that ſcarcely projected from the ſkin, found no alteration of much conſequence in the courſe of ſeveral months. It happens not unfrequently that the diſeaſe, though to appearance nearly removed, will continue in a very ſlight degree (as in one or or more ſmall ſpots) without farther amendment, reſiſting every remedy for a long time, and at laſt oblige us to diſmiſs our patients without even a perfect temporary removal of the diſeaſe.

It is found by experience, that the Bath waters, though often effectual in clearing the ſkin for a time, cannot inſure the patient againſt a return; and on this account it is common in regiſtering ſuch patients, not to ſet them down as *cured*, but as *cleanſed* only, which is meant to

to imply that the relief may poſſibly be temporary only. Many inſtances, however, have occurred, where the diſorder has never made its appearance again, though the patient lived many years after.

I have been able to trace the cauſe of this diſeaſe in ſo many inſtances, that I am much inclined to think it is univerſal. I mean here, the ſudden application of cold to the body, when in an heated ſtate. This generally happens from drinking ſome cold liquor, but this is not neceſſary, as I have ſeen inſtances wherein the external application of cold has produced the ſame effect. It matters not by what means the body is heated, whether by heat of rooms, or weather, or by exerciſe, ſince cold produces the ſame effect in each of the above caſes. Hence ſuch perſons are eſpecially liable to it, whoſe way of life ſubjects them to ſuch viciſſitudes, as ſmiths, and other artificers, who are obliged to work near fires, or in heated rooms; or ſuch perſons as uſe violent

violent exercise or labour, as huntsmen, porters, and the like, who are apt to indulge their appetites without much caution. Women also, exposed to similar accidents, are equally liable to the same disease; such as cooks, laundresses, &c. several of whom I have seen so affected in the Bath hospital. It is worth observing, that the danger is much less in those who take cold when heated with labour or exercise, provided they continue to pursue their labour after drinking, than it would have been had they left off their work immediately. Those cases that I have seen were of persons who exposed themselves to the effects of cold whilst they were at rest.

The same observation holds equally of cold externally applied. The quality of the cold liquor drank, is, I believe, of less consequence than the temperature. I have known the disease to follow the drinking of water, milk, and beer; and I doubt not, many other cold liquors

would do the ſame. Whether ſtronger fermented liquors, or ſuch as are warmed by aromaticks, would be equally hazardous, I cannot determine.

I have been told from good authority, though I never knew ſuch a caſe to happen at the Bath hoſpital, that the application of cold to the body when heated, has cauſed the leprous eruption to diſappear ſuddenly, and has produced great diſturbance in the ſyſtem. *Dover's Powders*, with the ſaline draught, are ſaid to have been given in ſuch caſes with advantage.

One of the moſt deplorable caſes that ever fell under my obſervation, aroſe, as I was told, from this cauſe. A girl about eighteen years of age, having a leprous eruption on her ſkin, drank, when violently heated, a large draught of cold water. Preſently afterwards the leprous eruption diſappeared ſuddenly, and the patient was ſeized with a perpetual diſ-

poſition

poſition to vomiting or retching, inſo-much that ſhe could keep nothing on her ſtomach; for which complaint ſhe was ſent to the Bath hoſpital. A variety of medicines and applications were tried there without their affording the ſmalleſt relief. Beſides the Bath waters, both internally and externally uſed, opiates, bitters with aromaticks, elixir proprie-tatis, the effervеſcing ſaline draught, ipe-cacuanha in ſmall doſes, and almoſt every form of a ſedative or aromatick medicine, beſides ſeveral external applications both of the opiate and ſtimulant kind, were ineffectually tried.

After a ſtay of ſeveral months, ſhe was diſcharged *no better*, and readmitted ſome months afterwards, her diſeaſe having then put on a different appearance. Her vomiting had ceaſed, but her limbs were almoſt univerſally in a ſtate of conſtant convulſion, though without depriving her of ſenſe. The waters were again tried, with a numerous aſſortment of

new remedies, but with no better ſucceſs than before; and after a long ſtay, I was compelled to diſmiſs her without any benefit from what had been tried for her. She was lately (about two years ſince her being a patient at the Bath hoſpital) alive, but in a very deplorable ſtate.

It appears from the hoſpital regiſter, that from Jan. 1, 1776, to Jan. 1, 1783, 196 patients were admitted for this diſeaſe, of whom 119 were *cleanſed*, 51 *much better*, 12 *better*, 8 *no better*, 2 dead of the ſmall-pox, 1 diſcharged for miſbehaviour, and 3 improper for a trial of the Bath waters. The proportion of thoſe benefited, to thoſe that received no benefit, is (excluding the two that died of the ſmall-pox, the one diſcharged for miſbehaviour, and the three that were improper for a trial of the waters) as 22.75 to 1.

The above are the principal diſorders in which the Bath waters have been found

found to be ſucceſsful. Analogy will, no doubt, extend their uſe to others of a ſimilar nature, though not exactly correſponding with the above deſcriptions, which muſt be conſidered rather as general outlines, than as approaching to exact delineations. It ſeldom happens that two caſes tally, in point of the ſymptoms at large, though they may agree in the leading circumſtances, and afford information ſufficient to direct the practice of the phyſician.

I would, however, recommend to thoſe who adviſe patients to the uſe of the Bath waters, to keep in their minds the conſideration of the ſtimulant quality which they poſſeſs, and which is undoubtedly of an inflammatory tendency. In many inſtances, this quality is highly uſeful, but in others extremely dangerous; and it is often difficult to adjuſt properly theſe diſtinctions. This I have endeavoured to do in ſome meaſure in this work, but I do not flatter myſelf ſo far as

as to offer it to the world in any other light than that of an imperect attempt towards the explanation of an important ſubject.

Circumſtances in which the Bath waters are contraindicated.

I ſhall conclude with a few remarks by way of caution on the circumſtances in which the Bath waters are peculiarly contraindicated. It has been noticed frequently in the courſe of this work, that the Bath waters were improper in all caſes attended with ſymptoms of fever. This obſervation is however more particularly applicable to ſome ſpecies of fever than others.

The Bath waters ſeem eſpecially to aggravate complaints of the lungs, and are of courſe extremely dangerous to be drank whilſt any tendency to inflammation of thoſe organs ſubſiſts. This is particularly applicable to conſumptive patients, to whom the uſe of the waters is well known to be highly injurious. Much caution is even neceſſary in directing

ing the uſe of the waters to thoſe whoſe frame of body, complexion, and age, indicate a propenſity to ſuch diſorders.

Thus a catarrhous cold, if attended with cough and ſoreneſs of the breaſt, is well known to be aggravated by perſiſting in the uſe of the waters, which would ſoon convert a caſual (and if properly treated a temporary) indiſpoſition only, into a dangerous diſeaſe.

Hectick fevers of every other kind, are equally improper for a trial of the Bath waters, with thoſe that ariſe from affections of the lungs. Some of theſe, which ariſe from internal ſchirrhus, I have before noticed, and the caution might be extended to all.

I muſt, however, acknowledge, that a caſe fell under my obſervation at the Bath Hoſpital, wherein a quick pulſe, white tongue, thirſt, loſs of appetite, irregular fluſhings of the cheeks, great emaciation,

emaciation, and almoſt utter proſtration of ſtrength, ſeemed ſtrongly to point out a hectick diſpoſition, and of courſe induced me to think that the Bath waters were unlikely to be of ſervice. On enquiry, however, I found that the patient (a young man) had been expoſed to great hardſhip, both from want of ſufficient and wholeſome food, and of clothing. This circumſtance induced me to ſuffer the patient to continue in the hoſpital, from an idea that the ſymptoms above deſcribed might be produced by his hardſhips, and poſſibly relieved by an oppoſite regimen; I therefore directed him a nouriſhing diet, with the moderate uſe of the Bath waters internally, and the bath occaſionally, and was pleaſed to find that the unpromiſing ſymptoms gradually abated, and in about three months ceaſed altogether, and he was diſcharged free of complaint.

I am far from aſcribing the cure in this caſe altogether to the Bath waters; as

as I doubt not that wholſome food and warm clothing, together with other comfortable accommodations, were the principal means of the patient's recovery. The good effects of the Bath waters were, however, very diſcernible, by the warmth they imparted to the ſyſtem at large, and by their effects on the ſpirits and appetite. Indeed, I much doubt if the cure could have been accompliſhed without their aſſiſtance, conſidering the weak ſtate of the organs of digeſtion.

Caſes of perſons ſo reduced by want of the immediate neceſſaries of life, do not often occur in private practice, but I think I have obſerved ſomewhat analogous in ſome complaints of the ſtomach; wherein, from the weakneſs of that organ, the body was deprived of nouriſhment. I think I have remarked this in ſome perſons who had injured their ſtomachs by exceſs in ſtrong liquors, and have often ſeen ſimilar ſymp-

toms to thoſe above deſcribed abated, and relieved, as the ſtomach recovered by the uſe of the waters its powers of retaining and digeſting the food.

For ſimilar reaſons to the foregoing, the uſe of the Bath waters, even internally, is improper in all caſes accompanied with any open ſore or ulcer, eſpecially in large ſuppurations, which are generally attended with ſome degree of hectick fever, ſeldom dangerous in itſelf, if the matter have a free diſcharge; but liable to become ſo by the uſe of ſuch a ſtimulating regimen as the Bath waters. Hœmorrhages are, for the ſame reaſons, improper for a trial of the bath, ſuch only excepted as we wiſh to promote, as the menſtrual flux, and perhaps, in ſome inſtances, the hœmorrhoidal.

It is proper to caution thoſe who have the cure of perſons that have any tendency to mania, to be cautious how they ſuffer them to uſe the Bath waters, as they

they ſo quickly and powerfully affect the head. This caution, however, need not be extended to perſons whoſe depravation of underſtanding is of the low or melancholick kind; as I have reaſon to think I have obſerved a caſe of this kind in which conſiderable benefit was received from their uſe.

Hernia, or inteſtinal rupture, is another complaint, that, in the opinion of ſome very judicious perſons, forbids the uſe of theſe waters externally as a bath. This, however, is not agreeable to my own obſervation; ſince I have known ſeveral perſons ſo circumſtanced uſe the bath without any increaſe of the diſorder, and ſome of them with a manifeſt and conſiderable diminution of the bulk of the ſwelling.

I have thus brought the propoſed Work to a concluſion, and ſhall not anticipate the judgment of the publick concerning it. I have ſet down nothing

which

which I do not believe to be true, or probable, but do not mean to vouch for any more than the particular facts as related. Time, the teſt of opinions, muſt determine what regard is due to thoſe I have formed concerning the uſe of this powerful but (in many inſtances) nice remedy.

FINIS.

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